

	1060		1065		1070
Ser	Ala	Asn	Val	Ala	Ser
	1075		1080		1085
Ala	Leu	Pro	Arg	Thr	Leu
	1090		1095		1100

<210> 9538
 <211> 1120
 <212> PRT
 <213> B.fragilis

<400> 9538

Thr	Ser	Leu	Leu	Leu	Thr	Gln	Lys	Ala	Ile	Leu	Met	Lys	Lys	Thr	Ile
1			5					10						15	
Phe	Leu	Ile	Leu	Cys	Ile	Leu	Cys	Ser	Leu	Gly	Ala	Met	Ala	Gln	Lys
		20					25						30		
Lys	Ser	Ile	Thr	Gly	Val	Val	Thr	Asp	Ala	Ser	Gly	Glu	Ser	Val	Ile
		35				40						45			
Gly	Ala	Ser	Val	Val	Glu	Val	Gly	Thr	Thr	Asn	Gly	Val	Ile	Thr	Asp
	50					55				60					
Ile	Ser	Gly	Lys	Phe	Thr	Leu	Met	Val	Asp	Pro	Asn	Gly	Lys	Ile	Lys
65					70					75					80
Val	Ser	Tyr	Val	Gly	Tyr	Gln	Pro	Gln	Val	Leu	Asp	Val	Lys	Gly	Lys
			85					90						95	
Asn	Ser	Phe	Asn	Ile	Lys	Leu	Lys	Glu	Asp	Ser	Glu	Met	Leu	Asp	Glu
			100					105					110		
Val	Val	Val	Thr	Gly	Tyr	Gly	Gly	Lys	Gln	Leu	Arg	Thr	Lys	Val	Thr
		115					120					125			
Asn	Ser	Ile	Gly	Lys	Val	Lys	Glu	Asp	Val	Leu	Gln	Lys	Gly	Leu	Phe
	130					135					140				
Ser	Asn	Pro	Ala	Gln	Ala	Leu	Ser	Gly	Ala	Val	Ser	Gly	Val	Arg	Val
145					150					155					160
Leu	Gln	Thr	Ser	Gly	Asp	Pro	Gly	Ala	Thr	Pro	Thr	Ile	Ile	Leu	Arg
			165					170						175	
Gly	Gly	Thr	Asp	Tyr	Asn	Gly	Thr	Gly	Ser	Pro	Leu	Val	Leu	Val	Asp
		180						185						190	
Gly	Gln	Val	Arg	Gly	Ser	Leu	Ser	Asp	Ile	Asn	Pro	Glu	Asp	Ile	Glu
	195					200						205			
Ser	Met	Glu	Val	Leu	Lys	Asp	Ala	Gly	Ala	Thr	Ala	Ile	Tyr	Gly	Ala
	210					215					220				
Arg	Ala	Asn	Asn	Gly	Val	Ile	Leu	Val	Thr	Thr	Lys	Arg	Gly	Lys	Glu
225					230					235					240
Gly	Lys	Gly	Glu	Val	Ser	Val	Lys	Ala	Lys	Val	Gly	Ile	Asn	Tyr	Tyr
			245					250						255	
Asn	Asn	Pro	Tyr	Glu	Phe	Met	Asn	Ala	Gly	Asp	Tyr	Ile	Tyr	Trp	Met
			260					265						270	
Arg	Thr	Ala	Tyr	Gln	Arg	Ser	Gly	Gln	Ile	Tyr	Lys	Asp	Ser	Lys	Gly
		275					280					285			
Asn	Trp	Val	Gly	Thr	Ala	Asp	Met	Asn	Ser	Leu	Asn	Asn	Ala	Thr	Pro
	290					295					300				
Tyr	Gly	Thr	Gly	Asn	Leu	Tyr	Phe	Asp	Pro	Ser	Thr	Gly	Ala	Val	Leu
305					310					315					320
Asp	Gly	Asn	Lys	Asp	Val	Arg	Ala	Val	Trp	Ser	Thr	Met	Lys	Tyr	Thr
			325					330						335	
Asp	Asp	Leu	Ala	Phe	Leu	Leu	Lys	Gln	Gly	Trp	Gln	Thr	Met	Thr	Asp
		340						345					350		
Pro	Val	Tyr	Gly	Asp	Gln	Ile	Ile	Tyr	Lys	Asn	Thr	Asp	Pro	Ala	Ser
		355					360					365			
Phe	Asn	Leu	His	Thr	Pro	Ser	Leu	Ser	Gln	Asp	Tyr	Asn	Ile	Ser	Ile

370		375		380
Ser Gly Gly Asn Asp	Lys Gly Asn Tyr Tyr Ala	Gly Ile Gly Tyr Asn		
385	390	395	400	
Asn Thr Asp Gly Thr	Ala Thr Gly Asn Trp Tyr	Lys Arg Leu Thr Phe		
	405	410	415	
Thr Phe Asn Ala Asp	Tyr Lys Ile Lys Pro Trp	Leu Thr Ser Ser Ser		
	420	425	430	
Ser Phe Asn Phe Ala Asp	Ala Thr Trp Tyr Gly	Leu Ser Pro Gly Ser		
	435	440	445	
Arg Gly Glu Val Glu Tyr	Phe Asn Arg Met Leu	Ser Leu Pro Pro Thr		
	450	455	460	
Phe Arg Gly Tyr Asn Ala	Asp Gly Glu Met Leu	Leu Gly Pro Asn Ser		
	465	470	475	
Ser Asp Gly Asn Gln Ser	Phe Asn Leu Ser Lys	Phe Lys Arg Asp Asn		
	485	490	495	
Asn Thr Asp Lys Phe Thr	Met Val Gln Ser Phe	Asp Ile Lys Leu Met		
	500	505	510	
Lys Gly Leu Asn Leu Lys	Leu Thr Ala Asn Trp	Tyr Phe Asp Glu Ala		
	515	520	525	
Lys Tyr Glu Ala Phe Asn	Gln Asp Tyr Leu Ser	Ser Pro Asn Asn Met		
	530	535	540	
Asn Thr Ser Arg Ser Thr	Ser Ala Glu Phe Asp	Arg Thr Leu Asn Gln		
	545	550	555	
Thr Tyr Asn Ala Val Leu	Asn Tyr Asp Tyr Gln	Ile Thr Lys Asp His		
	565	570	575	
Tyr Leu Ala Ala Met Leu	Gly Phe Glu Tyr Tyr	Asp Ala Tyr Gln Lys		
	580	585	590	
Gly Phe Asn Ala Ser Gly	Ser Gly Ala Pro Thr	Asp Asp Phe Gly Asp		
	595	600	605	
Leu Gln Phe Thr Ser Asn	Glu Glu Gly Lys Arg	Asn Ile Asp Ser Trp		
	610	615	620	
His Ser Arg Gln Arg Ile	Met Ser Phe Phe Gly	Arg Val Asn Tyr Asp		
	625	630	635	
Phe Gln Ser Lys Tyr Leu	Val Ser Phe Val Leu	Arg Lys Asp Gly Tyr		
	645	650	655	
Ser Lys Leu Ala Lys Asp	Asn Arg Trp Gly Val	Phe Pro Gly Ile Ser		
	660	665	670	
Ala Gly Trp Val Phe Gly	Lys Glu Lys Phe Met	Glu Ser Leu Gln Gln		
	675	680	685	
Val Val Ser Phe Ala Lys	Leu Arg Ala Ser Tyr	Gly Leu Asn Gly Asn		
	690	695	700	
Val Asn Lys Asp Trp Val	Gly Asn Tyr Thr Val	Gln Gly Ser Tyr Gly		
	705	710	715	
Ser Asn Lys Tyr Asn Gly	Asn Thr Gly Tyr Leu	Leu Gly Ser Leu Pro		
	725	730	735	
Ile Pro Tyr Leu Gln Trp	Glu Arg Ser Gln Thr	Phe Glu Val Gly Met		
	740	745	750	
Asp Leu Ser Phe Leu Glu	Asn Arg Ile Asn Thr	Asn Met Thr Tyr Tyr		
	755	760	765	
Asn Arg Arg Thr Glu Asp	Lys Tyr Ala Thr Ile	Pro Leu Pro Ser Ser		
	770	775	780	
Ser Gly Val Ser Gly Ile	Thr Ser Asn Asn Gly	Lys Leu Gln Asn Gln		
	785	790	795	
Gly Leu Glu Leu Glu Phe	Gly Phe Lys Val Leu	Glu Lys Arg Asp Trp		
	805	810	815	
Lys Trp Asn Ile Asn Leu	Asn Ala Ala Tyr Asn	Ile Asn Lys Ile Leu		
	820	825	830	
Glu Leu Pro Tyr Asn Gly	Leu Glu Arg Asn Arg	Gln Asn Ala Met Glu		
	835	840	845	

Val Tyr Thr Gly Arg Lys Leu Asp Asp Gly Ser Tyr Glu Lys Met Trp
 850 855 860
 Val Gly Gly Tyr Gln Glu Gly Gln Arg Pro Gly Asp Ile Tyr Ala Tyr
 865 870 875 880
 Lys Ala Glu Gly Leu Tyr Arg Ser Glu Ser Glu Ile Pro Gly Asn Leu
 885 890 895
 Ile Asp Lys Ser Thr Gly Asn Asn Ser Ser Asn Asn Lys Ile Leu Tyr
 900 905 910
 Gly Pro Glu Ala Trp Ala Lys Leu Thr Asp Gln Glu Lys Ser Lys Gly
 915 920 925
 Leu Pro Ile Gln Pro Gly Asp Val Lys Trp Lys Asp Val Asn Asn Asp
 930 935 940
 Gly Val Ile Asp Val Tyr Asp Gln Val Lys Val Gly Asn Thr Thr Pro
 945 950 955 960
 Lys Trp Thr Gly Gly Phe Asn Thr Thr Ile Ser Trp Lys Asp Leu Thr
 965 970 975
 Leu Ser Ala Arg Phe Asp Tyr Ala Leu Gly Phe Thr Val Ile Asp Trp
 980 985 990
 Lys Thr Pro Trp Ile Met Gly Asn Met Gln Gly Thr Tyr Asn Thr Ile
 995 1000 1005
 Ser Asp Thr Lys Asn Thr Trp Ser Pro Glu Asn Pro Asn Ala Lys Tyr
 1010 1015 1020
 Pro Thr Tyr Thr Trp Ala Asp Gln Leu Gly Lys Arg Asn Tyr Ala Arg
 1025 1030 1035 1040
 Ser Ser Ser Met Phe Thr Phe Asn Gly Asn Tyr Leu Ala Leu Arg Glu
 1045 1050 1055
 Leu Ser Leu Ala Tyr Arg Leu Pro Ser Gln Leu Ile Lys Lys Ala Gly
 1060 1065 1070
 Met Asn Asp Val Ser Phe Ser Ile Thr Gly Gln Asn Leu Gly Tyr Leu
 1075 1080 1085
 Thr Glu Ala Glu His Met His Ser Pro Glu Ser Ser Ser Asn Asn Gly
 1090 1095 1100
 Gly Tyr Pro Leu Pro Arg Thr Ile Ile Phe Gly Val Asn Val Ser Phe
 1105 1110 1115 1120

<210> 9539
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 9539
 Glu Phe Ser Phe Leu Pro Gly Ser Ala Tyr His Asp Gly Met Tyr Gly
 1 5 10 15
 Gln Lys Pro His Tyr Ala Pro Ala Tyr Gln Ile Pro Glu Leu Lys Val
 20 25 30
 Tyr Tyr Ala Leu Tyr Lys Lys Arg Leu Asn Leu Ser Leu Leu Pro Met
 35 40 45
 Tyr Ser Ile Tyr Pro Ala Tyr Glu Ser Cys Ser His Cys His Ser Thr
 50 55 60
 Ser Glu Lys Phe Tyr Phe Ala Ile Ser Met Ile Asp Phe Gln Ser Asp
 65 70 75 80
 Ala Asn Glu Lys His
 85

<210> 9540
 <211> 385
 <212> PRT
 <213> B.fragilis

<400> 9540

Phe Ile Met Leu Thr Gln Ile Ile Asn Gly Arg Ile Phe Thr Pro Gln
 1 5 10 15
 Gly Trp Leu Asn Glu Gly Ser Val Leu Met Arg Asp Gly Lys Ile Leu
 20 25 30
 Glu Val Thr Asn Cys Asp Leu Ala Leu Ile Gly Ala Asn Leu Val Asp
 35 40 45
 Ala Arg Gly Met Tyr Ile Val Pro Gly Phe Val Cys Met His Ala His
 50 55 60
 Gly Gly Gly Gly His Asp Phe Thr Glu Cys Thr Glu Glu Ala Phe Arg
 65 70 75 80
 Thr Ala Ile Ala Ala His Met Lys His Gly Ala Thr Ser Phe Phe Pro
 85 90 95
 Thr Leu Ser Ser Ser Pro Phe Ser Glu Ile Arg Lys Ala Val Asp Ile
 100 105 110
 Cys Glu Lys Leu Met Ala Glu Pro Asp Ser Pro Ile Leu Gly Leu His
 115 120 125
 Val Glu Gly Pro Tyr Leu Asn Arg Lys Met Ala Gly Glu Gln Phe Ala
 130 135 140
 Asn Gln Val Lys Glu Val Asp Val Ala Glu Tyr Thr Ser Leu Leu Glu
 145 150 155 160
 Ser Thr Asp Cys Ile Lys Arg Trp Asp Ala Ser Pro Glu Leu Pro Gly
 165 170 175
 Ala Leu Asp Phe Ala Arg Tyr Leu Lys Ser Lys Gly Ile Val Gly Ala
 180 185 190
 Val Ser His Thr Glu Ala Glu Tyr Asp Gly Ile Lys Glu Ala Tyr Glu
 195 200 205
 Ala Gly Phe Thr His Ala Ala His Phe Tyr Asn Ala Met Pro Gly Phe
 210 215 220
 His Lys Arg Arg Glu Tyr Lys Tyr Glu Gly Thr Val Glu Ser Val Tyr
 225 230 235 240
 Leu Thr Asp Gly Met Thr Ile Glu Leu Ile Ala Asp Gly Ile His Leu
 245 250 255
 Pro Ser Thr Ile Leu Lys Leu Ala Tyr Lys Leu Lys Gly Val Glu His
 260 265 270
 Thr Cys Leu Val Thr Asp Ala Leu Ser Tyr Ala Ala Ala Glu Gly Lys
 275 280 285
 Ala Ile Asp Asp Pro Arg Ile Ile Glu Asp Gly Val Cys Lys Leu
 290 295 300
 Ala Asp Arg Ser Ala Leu Ala Gly Ser Ile Ala Thr Met Asp Gln Leu
 305 310 315 320
 Val Arg Thr Met Val Lys Ala Asp Ile Pro Leu Ala Asp Ala Ile Arg
 325 330 335
 Met Ala Ser Glu Thr Pro Ala Arg Ile Met Gly Val Tyr Asp Arg Lys
 340 345 350
 Gly Ser Leu Gln Lys Asp Lys Asp Ala Asp Ile Leu Ile Leu Asp Arg
 355 360 365
 Asp Leu Asn Val Lys Ala Val Trp Ala Met Gly Gln Leu Val Lys Glu
 370 375 380
 Ser
 385

<210> 9541

<211> 398

<212> PRT

<213> B.fragilis

<400> 9541

Ile Pro Pro Leu Arg Ile Arg Ile Ile Thr Lys Leu Lys Ile Gly Met

1		5		10		15
Gln	Asn	Arg	Arg	Asp	Phe	Leu
		20		25		30
Ser	Gly	Leu	Ser	Leu	Gln	Gly
		35		40		45
Ser	Phe	Ala	Ile	Asn	Gln	Leu
		50		55		60
Phe	Phe	Pro	Tyr	Glu	Leu	Lys
		65		70		75
Tyr	Ser	Arg	Thr	Thr	Thr	Pro
			85			90
Gly	Val	Ile	Gly	Tyr	Gly	Glu
		100		105		110
Thr	Val	Asp	Ser	Val	Met	Gly
		115		120		125
Phe	Asp	Asp	Pro	Phe	Arg	Leu
		130		135		140
Leu	Thr	Pro	Gly	Asp	Thr	Ala
		145		150		155
His	Asp	Leu	Val	Gly	Lys	Leu
			165			170
Gly	Leu	Asp	Lys	Ala	Lys	Ala
		180		185		190
Asp	Thr	Pro	Glu	Val	Val	Arg
		195		200		205
Phe	Asn	Ile	Leu	Lys	Val	Lys
		210		215		220
Ile	Glu	Thr	Ile	Arg	Ser	Val
		225		230		235
Asn	Gln	Gly	Trp	Thr	Asp	Lys
			245			250
Leu	Lys	Glu	Lys	Gly	Ile	Val
		260		265		270
Gln	Leu	Asp	Asp	Ile	Ala	Trp
		275		280		285
Phe	Ala	Asp	Glu	Ser	Leu	Gln
		290		295		300
Gly	Ala	Phe	Thr	Gly	Ile	Asn
		305		310		315
Arg	Glu	Ala	Trp	Lys	Met	Val
			325			330
Val	Met	Val	Gly	Cys	Met	Thr
		340		345		350
Ala	Gln	Phe	Ser	Pro	Ala	Val
		355		360		365
Leu	Ile	Ala	Asn	Asp	Arg	Phe
		370		375		380
Ile	Thr	Leu	Asn	Asp	Leu	Pro
		385		390		395

<210> 9542

<211> 451

<212> PRT

<213> B.fragilis

<400> 9542

Thr	Phe	Glu	Thr	Tyr	Leu	Asp	Met	Arg	Lys	Leu	Leu	Tyr	Ile	Val	Met
1				5				10				15			
Ile	Phe	Ile	Gly	Val	Ser	Ala	Cys	Thr	Ser	Arg	Gln	Glu	Ser	Lys	Pro

	20		25		30
Tyr	Asp	Trp	Asp	Asp	Asp
	35		40		45
Leu	Thr	Glu	Ser	Gln	Val
	50		55		60
Val	Thr	Asp	Glu	Gln	Met
65			70		75
Cys	Arg	Val	Ile	Asp	Gly
			85		90
Asn	Leu	Phe	Arg	Ile	Asp
			100		105
Glu	Gly	Thr	Ser	Leu	Ser
			115		120
Pro	Glu	Val	Met	Ala	Ala
			130		135
Pro	Lys	Arg	Met	Arg	Val
145			150		155
Val	Pro	Ala	Gly	Lys	Met
			165		170
Asp	Gln	Pro	Arg	Gln	Gln
			180		185
Arg	Tyr	Thr	Leu	Ser	Pro
			195		200
Glu	Lys	Gln	Ala	Ile	Pro
			210		215
Glu	Tyr	Thr	Ser	Cys	Ala
225			230		235
Leu	Pro	Tyr	Asp	Thr	Ala
			245		250
Arg	Glu	Thr	His	Ile	Arg
			260		265
Asn	Leu	Thr	Val	Gly	Glu
			275		280
Phe	Arg	Trp	Ile	Asn	Asp
			290		295
Ser	Thr	Ile	Glu	Asn	Ile
305			310		315
Asp	Cys	Gly	Gln	Val	Ser
			325		330
Gly	Ile	Pro	Ala	Arg	Phe
			340		345
Trp	Asn	Leu	His	Asp	Trp
			355		360
Val	Pro	Val	Asp	Gln	Ser
			370		375
Glu	Glu	Lys	Met	Phe	Phe
385			390		395
Val	Asn	Ser	Asp	Tyr	Ser
			405		410
Arg	Ser	Glu	Thr	Val	Asp
			420		425
Gly	Asn	Leu	Tyr	Phe	Pro
			435		440
Leu	Asn	Tyr			
			450		

<210> 9543

<211> 70

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (17)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9543

Lys	Leu	Phe	Leu	Leu	Gly	Phe	Pro	Thr	Gly	Arg	Glu	Phe	Phe	Thr	Leu
1				5					10					15	
Xaa	Leu	Arg	Trp	Gly	Asp	Lys	Asp	Ser	Val	Gly	Val	Asn	Glu	Phe	Leu
			20					25				30			
Ser	Leu	Leu	Pro	Lys	Gly	Val	Thr	Arg	Val	Leu	Asn	Thr	Leu	Ile	Phe
		35					40				45				
Leu	Ser	Ser	Arg	Asp	Ala	Asp	Ser	Pro	Lys	Arg	Cys	Val	Gly	Val	Val
	50					55					60				
Lys	Thr	Arg	Phe	Val	Arg										
65					70										

<210> 9544

<211> 406

<212> PRT

<213> B.fragilis

<400> 9544

Pro	Pro	Asn	Leu	Ser	Phe	Met	Lys	Asn	Met	Ile	Pro	Phe	Val	Ser	Leu
1				5					10					15	
Leu	Leu	Ala	Val	Ser	Ala	Cys	Thr	Gly	Ile	Pro	Glu	Asn	Lys	Lys	Asn
			20					25				30			
Ala	Leu	Pro	Gln	Asp	Val	Glu	Arg	Leu	Ser	Gly	Glu	Val	Arg	Asp	Arg
		35					40				45				
Phe	Ile	Pro	Asp	Lys	Arg	Val	Ile	Leu	Trp	Asp	Val	Asp	Tyr	Asp	Val
	50					55				60					
Ser	Gly	Lys	Thr	Ile	Thr	Val	Lys	Gly	Ala	Thr	Thr	Ser	Pro	Glu	Ala
65					70				75					80	
Lys	Ala	Ala	Leu	Leu	Ser	Gly	Leu	Glu	Glu	Lys	Ala	Tyr	Glu	Val	Lys
			85					90					95		
Asp	Ser	Leu	Gln	Leu	Val	Pro	Asp	Ser	Ala	Ala	Leu	Glu	Gly	Lys	Met
		100						105				110			
Tyr	Gly	Ile	Val	Asn	Leu	Ser	Val	Cys	Asn	Met	Arg	Val	Glu	Asp	Asp
		115					120					125			
Phe	Ser	Ser	Glu	Met	Thr	Thr	Gln	Ala	Leu	Met	Gly	Met	Pro	Val	Lys
	130					135					140				
Val	Leu	Gln	His	Arg	Asn	Trp	Tyr	Arg	Ile	Gln	Thr	Pro	Asp	Asn	Tyr
145					150				155					160	
Ile	Ala	Trp	Val	His	Arg	Val	Gly	Ile	His	Pro	Val	Thr	Lys	Ala	Gly
			165					170					175		
Leu	Asp	Ala	Trp	Asn	Lys	Ala	Asp	Lys	Ile	Val	Val	Thr	Ser	His	Tyr
		180						185				190			
Gly	Phe	Thr	Tyr	Gln	Gln	Pro	Asp	Glu	Lys	Ser	Gln	Ser	Val	Ser	Asp
	195					200					205				
Val	Val	Ala	Gly	Asn	Arg	Leu	Lys	Tyr	Glu	Gly	Lys	Gln	Gly	Gly	Phe
	210					215					220				
Tyr	Lys	Val	Ser	Tyr	Pro	Asp	Gly	Arg	Gln	Ala	Tyr	Ile	Ser	Gln	Ser
225					230				235					240	
Ile	Ser	Met	Pro	Glu	Lys	Glu	Trp	Arg	Ala	Ser	Leu	Lys	Gln	Asp	Ala
			245						250				255		
Ser	Ser	Ile	Ile	Arg	Thr	Ala	Tyr	Thr	Met	Met	Gly	Ile	Pro	Tyr	Leu
			260					265					270		

[illegible][illegible]

<400> 9546															
Met	Asn	Lys	Lys	Asn	Ser	Met	Lys	Gln	Thr	Thr	Lys	Asn	Ile	Leu	Gly
1				5					10					15	
Ile	Gly	Ala	Val	Val	Leu	Leu	Ser	Ala	Gly	Val	Ala	Gly	Val	Thr	Thr
			20					25					30		
Tyr	Thr	Met	Leu	Lys	Pro	Glu	Asn	Arg	Asp	Ser	Leu	Ser	Phe	Asn	Glu
		35					40					45			
Gln	Phe	Arg	Gln	Asn	Pro	Gly	Ala	Arg	Leu	Ala	Ala	Tyr	Asp	Ala	Ile
	50					55				60					
Asn	Ala	Gln	Pro	Val	Asp	Leu	Thr	Gln	Ala	Ala	Glu	Asn	Ser	Leu	His
65					70					75					80
Ala	Val	Val	His	Ile	Lys	Ser	Thr	Gln	Gln	Ala	Lys	Glu	Gln	Thr	Val
				85					90					95	
Thr	Val	Arg	Asp	Pro	Phe	Ala	Glu	Ile	Phe	Gly	Asp	Ile	Phe	Gly	Asn

[illegible]

<213> B.fragilis

<400> 9547

Gln Asn Met Lys Tyr Val Lys Ile Leu Phe Ala Val Ala Leu Val Phe
 1 5 10 15
 Thr Leu Cys Ser Ala Phe Ser Leu Lys Lys Gly Gly His Lys Pro Val
 20 25 30
 Tyr Ala Phe Gly Val Ser Ala Ser Phe Thr Asp Thr Val Ile Tyr Tyr
 35 40 45
 Thr Glu Ile Gln Met Leu Asp Ser Val Ala Leu Asp Lys Asn Gly Phe
 50 55 60
 Leu Pro His Arg Glu Leu Tyr Ser Tyr Gln Leu Lys Asn Tyr Leu Glu
 65 70 75 80
 Phe Asp Lys Gly Leu Pro Asn Arg Thr Cys Met Ile Tyr Phe Ser Glu
 85 90 95
 Asn Lys Lys Lys Leu Gly Lys Glu Ala Ala Lys Val Val Gly Lys Phe
 100 105 110
 Lys Lys Asn Lys Thr Val Ala Val Glu Lys Ile Asp Pro Gln Asn Phe
 115 120 125
 Arg Phe Ser Lys Pro Glu Glu
 130 135

<210> 9548

<211> 230

<212> PRT

<213> B.fragilis

<400> 9548

Asn Met Val Lys Phe Ile Glu Ser Glu Leu Val Leu Leu Lys Lys Glu
 1 5 10 15
 Ile Asp Glu Met Trp Thr Leu Val Tyr Asn Gln Leu Asp Arg Ala Gly
 20 25 30
 Glu Ala Val Leu Thr Leu Asp Lys Glu Leu Ala Gln Gln Val Ile Val
 35 40 45
 Arg Glu Arg Arg Val Asn Ala Phe Glu Leu Lys Ile Asp Ser Asp Val
 50 55 60
 Glu Asp Val Ile Ala Leu Tyr Asn Pro Val Ala Ile Asp Leu Arg Phe
 65 70 75 80
 Val Leu Ala Met Leu Lys Ile Asn Thr Asn Leu Glu Arg Leu Gly Asp
 85 90 95
 Phe Ala Glu Gly Ile Ala Arg Phe Val Val Lys Ser Glu Glu Pro Val
 100 105 110
 Leu Asp Glu Glu Leu Leu Lys Arg Leu Arg Leu Glu Glu Met Gln Lys
 115 120 125
 Gln Val Leu Ser Met Leu Glu Val Ala Lys Arg Ala Leu Asn Glu Glu
 130 135 140
 Ser Leu Glu Leu Ala Thr Ser Val Phe Ala Lys Asp Asn Leu Leu Asp
 145 150 155 160
 Glu Ile Asn Ala Glu Ala Thr Ala Val Leu Ala Glu Tyr Ile Lys Glu
 165 170 175
 His Pro Glu Ser Thr Leu Ser Cys Leu Asn Leu Val Gly Val Phe Arg
 180 185 190
 Lys Leu Glu Arg Ser Gly Asp His Ile Thr Asn Ile Ala Glu Glu Ile
 195 200 205
 Val Phe Phe Ile Asp Ala Lys Val Leu Lys His Ser Gly Lys Val Glu
 210 215 220
 Glu His Tyr Pro Ala Lys
 225 230

<210> 9549

<211> 69

<212> PRT
 <213> B.fragilis

<400> 9549

Lys Arg Asn Glu Arg Arg Ser Gly Lys Lys Ala Gly Lys Leu Phe Leu
 1 5 10 15
 Ile Thr Ala Ile Asn Asp Leu Ser Asp Thr Glu Trp Ala Leu Arg Val
 20 25 30
 Gly Asp Ile Lys Lys Thr His Ile Ala Leu Ile Gly Asn Gly Ile Tyr
 35 40 45
 Phe Thr Thr Asp Tyr Thr Asp Phe His Gly Leu Tyr His Pro Val Leu
 50 55 60
 Gly Gly Arg Asn Tyr
 65

<210> 9550

<211> 439

<212> PRT

<213> B.fragilis

<400> 9550

Ile Lys Lys Asp Pro Thr Ser Met Lys Leu Ile Tyr Arg Ile Ile Ile
 1 5 10 15
 Arg Ile Ala Leu Met Leu Thr Val Val Leu Gly Ala Trp Ala Val Phe
 20 25 30
 Phe Tyr Ile Ala Val Ile Asp Glu Val Asn Asp Glu Val Asp Asp Ser
 35 40 45
 Leu Glu Asp Tyr Ser Glu Thr Ile Ile Ile Arg Ala Leu Ala Gly Glu
 50 55 60
 Glu Leu Pro Ser Lys Asn Asn Gly Ser Asn Asn Gln Tyr Tyr Leu Arg
 65 70 75 80
 Lys Val Ser Lys Glu Tyr Ala Asp Glu Arg Glu Asp Ile Cys Tyr Lys
 85 90 95
 Asp Ser Met Val Tyr Ile Val Glu Lys Glu Glu Thr Glu Pro Ala Arg
 100 105 110
 Ile Leu Thr Thr Leu Phe Lys Asp Asp Glu Gly Gln Tyr Tyr Glu Leu
 115 120 125
 Thr Val Ser Thr Pro Thr Ile Glu Lys Asp Asp Leu Lys Asp Ala Met
 130 135 140
 Leu Gly Trp Ile Ile Phe Leu Tyr Ile Val Leu Leu Thr Ile Leu
 145 150 155 160
 Ile Val Cys Ile Trp Ile Phe His Arg Ser Met Lys Pro Leu Tyr Asn
 165 170 175
 Leu Leu Arg Trp Leu Asp Ala Tyr Arg Ile Gly Arg Pro Asn Arg Pro
 180 185 190
 Leu Lys Asn Glu Thr Gln Ile Thr Glu Phe Arg Lys Leu Asn Glu Ala
 195 200 205
 Ala Ile Arg Asn Ala Glu Arg Ser Glu His Ile Phe Glu Gln Gln Lys
 210 215 220
 Gln Phe Ile Gly Asn Ala Ser His Glu Met Gln Thr Pro Leu Ala Ile
 225 230 235 240
 Cys Arg Asn Arg Leu Glu Met Leu Met Glu Asp Asp Ser Leu Ser Glu
 245 250 255
 Ala Gln Leu Glu Glu Leu Ile Lys Thr His Gln Thr Leu Glu His Ile
 260 265 270
 Thr Lys Leu Asn Lys Ser Leu Leu Leu Leu Ser Lys Ile Asp Asn Gly
 275 280 285
 Gln Phe Ser Asp Thr Arg Thr Val Glu Phe Asn Ser Met Leu Lys Arg
 290 295 300

Tyr Ile Glu Asp Tyr Lys Glu Val Tyr Gly Tyr Arg Glu Ile Glu Leu
 305 310 315 320
 Thr Leu Asp Glu Gln Gly Ile Phe Arg Ala Glu Met Asn Glu Ser Leu
 325 330 335
 Ala Val Ala Leu Ile Thr Asn Leu Leu Lys Asn Ala Phe Val His Asn
 340 345 350
 Val Asp Gly Gly His Ile Arg Ile Glu Ile Thr Gly His Ser Met Thr
 355 360 365
 Phe Arg Asn Ser Gly Ala Gly Arg Pro Leu Asp Ala Thr His Ile Phe
 370 375 380
 Glu Arg Phe Tyr Gln Gly Ser Lys Lys Glu Gly Ser Thr Gly Leu Gly
 385 390 395 400
 Leu Ala Ile Ala Asp Ser Ile Cys Lys Leu Gln His Leu Thr Leu Arg
 405 410 415
 Tyr Tyr Phe Glu Lys Asp Glu His Cys Phe Glu Leu Arg Lys Asn Asn
 420 425 430
 Phe Thr Thr Asp Tyr Ala Asp
 435

<210> 9551

<211> 394

<212> PRT

<213> B.fragilis

<400> 9551

Phe Met Lys Leu Lys Ile Thr Leu Tyr Ser Val Cys Leu Leu Met Leu
 1 5 10 15
 Leu Ala Ala Cys Gln Gln Asp Gly Pro Thr Pro Glu Pro Ser Val Gly
 20 25 30
 Ser Arg Thr Val Leu Val Tyr Met Ile Ala Gln Asn Ser Leu Ala Pro
 35 40 45
 Leu Ala Ser Ala Asp Ile Glu Glu Met Lys Glu Gly Met Arg Gln Val
 50 55 60
 Asp Ala Thr Ser Gly Asn Leu Leu Val Tyr Ile Asp Asp Tyr Ser Ala
 65 70 75 80
 Pro Arg Leu Ile Arg Leu Gly Lys Asp Lys Lys Gly Lys Val Val Glu
 85 90 95
 Glu Thr Ile Glu Asn Tyr Pro Glu Gln Asn Ser Ala Asp Ala Asn Val
 100 105 110
 Met Lys Lys Val Ile Ser Thr Ala Phe Asn Gln Tyr Lys Ala Glu Lys
 115 120 125
 Tyr Gly Met Val Phe Trp Ser His Gly Glu Gly Trp Ile Pro Ser Pro
 130 135 140
 Ala Lys Thr Arg Trp Phe Gly Gln Asp Gly Asn Asn Tyr Met Asp Ile
 145 150 155 160
 Ala Asp Leu His Ala Ala Leu Gln Val Ala Pro Asp Leu Asp Phe Leu
 165 170 175
 Phe Phe Asp Ala Cys Phe Met Glu Ala Val Glu Val Ala Tyr Ala Leu
 180 185 190
 Arg Asp Cys Gly Ser Tyr Leu Ile Ser Ser Pro Thr Glu Ile Pro Gly
 195 200 205
 Pro Gly Ala Pro Tyr Gln Thr Val Val Pro Ala Met Phe Ser Ala Glu
 210 215 220
 Asn Ala Ala Leu Lys Ile Ala Ser Cys Tyr Tyr Asp Tyr Tyr Gln Ser
 225 230 235 240
 Arg Tyr Asn Asp Gly Ile Gly Met Ser Asn Glu Asp Trp Thr Gly Gly
 245 250 255
 Val Ser Val Gly Val Ala Lys Met Ser Glu Leu Glu Asn Leu Ala Val
 260 265 270

Ala Thr Ser Lys Val Leu Pro Arg Tyr Ile Thr Gly Lys Gln Asn Phe
 275 280 285
 Asp Leu Ser Gly Val Met Cys Tyr Asp Arg Arg Thr Asp Lys Gln Tyr
 290 295 300
 Tyr Tyr Asp Leu Asp Arg Phe Ile Tyr Gln Ile Thr Ala Gly Asn Gly
 305 310 315 320
 Asp Tyr Asp Ser Trp Arg Glu Ala Phe Asp Lys Val Met Val Tyr Trp
 325 330 335
 Lys Ser Thr Pro Arg Asn Tyr Ser Ala Tyr Ala Gly Met Phe Thr Met
 340 345 350
 Asn Gln Asp Thr Lys Gly Leu Ser Thr Tyr Ile Pro Arg Met Ser Ala
 355 360 365
 Pro Ser Leu Asn Thr Ser Tyr Gln Gln Thr Glu Trp Tyr Lys Val Ser
 370 375 380
 Gly Trp Ala Asp Thr Gly Trp Tyr Lys Asn
 385 390

<210> 9552

<211> 95

<212> PRT

<213> B.fragilis

<400> 9552

Lys Val Leu Cys Gln Asn Ser Pro Gln Ser Gly Thr Glu Gln Ser Ile
 1 5 10 15
 Thr Glu Phe Phe Thr Thr Asn Gln Gln Leu Lys Ile Val Ser Val Leu
 20 25 30
 Leu Cys Val Leu Cys Gly Glu Tyr Gly His Thr Ser Glu Ser Pro Ala
 35 40 45
 Glu Lys Val Phe Gly Ser Leu Ile Ile Ala Lys Glu Ile Glu Lys Arg
 50 55 60
 Val Pro Ala Ile Asn Gln Ser Val Leu Phe Leu Phe Ile Leu Val Asp
 65 70 75 80
 Asn Asn Gly Glu Lys Val Val Lys Ile Tyr Thr Leu Thr Asn Lys
 85 90 95

<210> 9553

<211> 301

<212> PRT

<213> B.fragilis

<400> 9553

Gln Ile Asn Ser Arg Asn Phe Ala Leu Gln Ile Cys Phe Ile Arg Met
 1 5 10 15
 Arg Gln Leu Lys Ile Thr Lys Ser Ile Thr Asn Arg Glu Ser Ala Ser
 20 25 30
 Leu Asp Lys Tyr Leu Gln Glu Ile Gly Arg Glu Asp Leu Ile Thr Val
 35 40 45
 Glu Glu Glu Val Glu Leu Ala Gln Arg Ile Arg Lys Gly Asp Arg Val
 50 55 60
 Ala Leu Glu Lys Leu Thr Arg Ala Asn Leu Arg Phe Val Val Ser Val
 65 70 75 80
 Ala Lys Gln Tyr Gln Asn Gln Gly Leu Ser Leu Pro Asp Leu Ile Asn
 85 90 95
 Glu Gly Asn Leu Gly Leu Ile Lys Ala Ala Glu Lys Phe Asp Glu Thr
 100 105 110
 Arg Gly Phe Lys Phe Ile Ser Tyr Ala Val Trp Trp Ile Arg Gln Ser
 115 120 125
 Ile Leu Gln Ala Leu Ala Glu Gln Ser Arg Ile Val Arg Leu Pro Leu

130	135	140
Asn Gln Val Gly Ser Leu	Asn Lys Ile Ser Lys Ala Phe Ser Lys Phe	
145	150	155
Glu Gln Glu Asn Glu Arg Arg Pro Ser Pro Glu Glu Leu Ala Gly Glu		160
	165	170
Leu Asp Ile Pro Val Asp Lys Ile Ser Asp Thr Leu Lys Val Ser Gly		175
	180	185
Arg His Ile Ser Val Asp Ala Pro Phe Val Glu Gly Glu Asp Asn Ser		190
	195	200
Leu Leu Asp Val Leu Val Asn Asp Asp Ser Pro Met Ala Asp Arg Ser		205
	210	215
Leu Val Asn Glu Ser Leu Ala Arg Glu Ile Asp Arg Ala Leu Ser Thr		220
225	230	235
Leu Thr Asp Arg Glu Lys Glu Ile Ile Gln Met Phe Phe Gly Ile Gly		240
	245	250
Gln Gln Glu Met Thr Leu Glu Glu Ile Gly Asp Lys Phe Gly Leu Thr		255
	260	265
Arg Glu Arg Val Arg Gln Ile Lys Glu Lys Ala Ile Arg Arg Leu Arg		270
	275	280
Gln Ser Asn Arg Ser Lys Leu Leu Lys Ser Tyr Leu Gly		285
	290	295
		300

<210> 9554
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 9554
 Ile Lys Asn Arg Thr Met Phe Ser Gly Ile Val Glu Glu Tyr Ala Thr
 1 5 10 15
 Val Val Ala Leu Val Lys Asp Gln Glu Asn Ile His Phe Thr Leu Lys
 20 25 30
 Cys Ser Phe Val Asn Glu Leu Lys Ile Asp Gln Ser Ile Ser His Asn
 35 40 45
 Gly Val Cys Leu Thr Val Val Ser Met Thr Glu Asp Thr Tyr Thr Val
 50 55 60
 Thr Ala Met Lys Glu Thr Leu Asp Arg Ser Asn Leu Arg Leu Leu Lys
 65 70 75 80
 Val Gly Asp Lys Val Asn Val Glu Arg Ser Met Met Met Asn Gly Arg
 85 90 95
 Leu Asp Gly His Ile Val Gln Gly His Val Asp Gln Thr Ala Glu Cys
 100 105 110
 Ile Asp Ile Lys Asp Ala Asp Gly Ser Trp Tyr Phe Thr Phe Lys Tyr
 115 120 125
 Ala Phe Asp Lys Glu Met Ala Lys Arg Gly Tyr Ile Thr Val Asp Lys
 130 135 140
 Gly Ser Val Thr Val Asn Gly Val Ser Leu Thr Val Cys Asn Pro Thr
 145 150 155 160
 Asp Asp Thr Phe Gln Val Ala Ile Ile Pro Tyr Thr Tyr Glu His Thr
 165 170 175
 Asn Phe His Thr Phe Gly Lys Gly Ser Val Val Asn Leu Glu Phe Asp
 180 185 190
 Ile Ile Gly Lys Tyr Ile Ser Arg Met Ile Gln Tyr Lys
 195 200 205

<210> 9555
 <211> 527
 <212> PRT
 <213> B.fragilis

<400> 9555

Leu His Ser Ser Phe His His Phe Phe Lys Val Ala Asp Phe Ala His
 1 5 10 15
 Arg Leu Ile Val Gly Phe Gln Asp Asp Glu Ala Leu Pro His Thr Gly
 20 25 30
 Ile Arg His Leu Ala Arg Ser Asp Ser Gly Asn Leu Gln Ala Val Ser
 35 40 45
 Glu Ile Glu Leu Phe Leu Gln Val Val Arg Gln Leu Leu Glu Gly Ser
 50 55 60
 Ala Gln Asn Leu His Thr Arg Ile Leu His Asn Leu Cys Cys Thr Leu
 65 70 75 80
 Phe Val Phe Gln Cys Tyr Ile Asp Ile Leu Phe Phe Leu Val Thr His
 85 90 95
 His Leu His Gly His Phe Ile Ala Arg Thr Met Leu Cys Asn Gly Phe
 100 105 110
 Leu Gln Val Gly Lys Val Leu His Phe Leu Ala Ile Asp Thr Asp Asp
 115 120 125
 Asp Ile Ile Tyr Leu Asp Ile Gly Thr Gly Ser Arg Thr Ser Ile Tyr
 130 135 140
 Asp Phe Ala Tyr Pro Asn Ala Ile His Tyr Ala Glu Leu Phe Ala Leu
 145 150 155 160
 Ile Gly Gln Cys Gly Ser Arg Phe Val Asp Arg Leu Ile Gly His His
 165 170 175
 Ile Thr Val Thr Arg Lys Arg Ser Thr Leu Asp Thr Gln Gln Arg Thr
 180 185 190
 Leu Tyr Gly Ser Val Leu Phe Gln Val Ala Asp His Phe Gly His His
 195 200 205
 Thr Gly Arg Asn Gly Lys Thr Val Ser Gly Ile Ser Ala Cys Arg Arg
 210 215 220
 Arg Lys His Gly Ile Asp Thr Tyr Gln Phe Thr Phe Cys Ile His Gln
 225 230 235 240
 Ser Ser Thr Ala Val Ser Leu Ile Asp Gly Gly Ile Cys Leu Asp Glu
 245 250 255
 Arg Phe Tyr Ser Pro Asp Ala Val His Thr Glu Arg Thr Cys Leu Gly
 260 265 270
 Thr Asp Asp Thr Gly Ser Tyr Ser Arg Gly Lys Ile Glu Arg Val Thr
 275 280 285
 Tyr Arg Gln Tyr Pro Leu Ser Tyr Phe Gln Gly Ile Arg Ile Ala His
 290 295 300
 Gly Asp Gly Arg Glu Ile Val Ser Leu Asp Leu Asp Gln Ser Gln Ile
 305 310 315 320
 Arg Ile Arg Val Gly Thr Asp His Ala Thr Phe Glu Leu Ala Val Val
 325 330 335
 Ile Gln Leu Asn Asp Asn Phe Val Arg Thr Val Asp His Val Ile Ile
 340 345 350
 Gly Asp Asp Val Thr Val Phe Gly Asn Asp Asp Thr Gly Thr Glu Ala
 355 360 365
 Asp Thr Arg Leu Gly Leu Tyr Thr Ala Leu Leu Ser Ala Ala Ile Thr
 370 375 380
 Glu Asp Ile Pro Glu Tyr Leu Cys Lys Arg Val Ala Tyr Gly His Ser
 385 390 395 400
 Leu Phe Phe Ser Leu Leu Ser Arg Phe Tyr Met Tyr Tyr Ser Met Lys
 405 410 415
 Arg Ile Phe Arg Arg Leu Arg Gln Ile Tyr Arg Leu Gly Ile Asn Gly
 420 425 430
 Val Ile Ser Ser Gln Ala Ser Thr Gly Ile Leu Thr Glu Leu Phe Ile
 435 440 445
 Lys Arg Gln Ala Val Ser Val Leu Arg Leu Gln His Arg Ile Gly Cys

450		455		460
His Ser Gly Asn Ser Cys Thr Glu Lys Asn Tyr Cys Ser Tyr Pro Glu				
465		470		475
Asn Val Phe Cys Cys Leu Phe His Thr Ile Leu Phe Ile His Leu Ile				480
		485		490
Val Asn Ile Leu Leu Ser Phe Asn Ile Tyr Asp Val Lys Ile Thr Thr				495
		500		505
Lys Ile Ile Leu Leu Phe Ser Leu Ser Leu Phe Phe Val Leu Phe				510
		515		520
				525

<210> 9556
 <211> 128
 <212> PRT
 <213> B.fragilis

<400> 9556
Phe Ala Asp Gly Val Gly Tyr Gly Lys Ser Gln Ser Gly Arg Thr Phe
1 5 10 15
Leu Phe Ala Ser Leu Ile Glu Ser Phe Lys Asp Met Gly Arg Ile Gln
20 25 30
Gly Ala Ala Cys Ala Ala Ile Pro Glu Gly His Ala Met Thr Gly Tyr
35 40 45
Phe Asn Pro Asp Met Pro Thr Val Tyr Val Val Tyr Lys Arg Ile Phe
50 55 60
Glu Gln Val Arg Tyr Gln Gly Tyr Cys Gln Arg Phe Ile His Leu Arg
65 70 75 80
Pro Glu Tyr Ser Leu Phe Ile Gln Arg Gln Leu Asn Phe Pro Ile Ala
85 90 95
Val Tyr Phe Phe Ile Ile Phe Tyr Ile Ser Leu Glu His Ala Val Glu
100 105 110
Leu Tyr Arg Ser Gly Ile Gly Glu Leu Ser Val Ile Tyr Phe Gly Gln
115 120 125

<210> 9557
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 9557
Gly Gly Pro Gly Ser Arg Gly Glu Lys Ser Met Asn Asp Phe Leu Gln
1 5 10 15
Leu Val Asn Ala Arg Gln Ser Asp Arg Ala Tyr Asp Lys Ser Arg Leu
20 25 30
Val Glu Ala Asp Lys Leu Glu Arg Ile Leu Glu Ala Gly Arg Leu Ala
35 40 45
Pro Ser Ala Cys Asn Ala Gln Pro Trp Arg Phe Val Val Val Thr Asp
50 55 60
Pro Ser Leu Ala Glu Lys Val Gly Lys Ala Ala Ala Gly Leu Gly Met
65 70 75 80
Asn Lys Phe Ala Lys Asp Ala Pro Val His Ile Leu Val Val Glu Glu
85 90 95
Ser Ala Asn Ile Thr Ser Arg Leu Gly Gly Lys Leu Lys Gly Lys His
100 105 110
Phe Pro Leu Ile Asp Ile Gly Ile Val Ala Ala His Met Val Leu Ala
115 120 125
Ala Glu Ser Glu Gly Leu Gly Ser Cys Ile Leu Gly Trp Phe Asp Glu
130 135 140
Lys Glu Ile Lys Ser Leu Thr Gly Ile Pro Ser Ser Lys Arg Val Leu
145 150 155 160

Leu Asp Ile Leu Ile Gly Tyr Pro Val Lys Glu Lys Arg Lys Lys Ile
 165 170 175
 Arg Lys Glu Ser Gly Lys Ile Ile Ser Tyr Asn Ser Tyr
 180 185

<210> 9558
 <211> 125
 <212> PRT
 <213> B.fragilis

<400> 9558
 Thr Leu Lys Gly Ala Ala Leu Trp Asp Glu Val Lys Asp Lys Leu Lys
 1 5 10 15
 Glu Ser Ala Phe Ala Leu Ser Gly Gly Gln Gln Gln Arg Leu Cys Ile
 20 25 30
 Ala Arg Ala Met Ala Val Ser Pro Ser Val Leu Leu Met Asp Glu Pro
 35 40 45
 Ala Ser Ala Leu Asp Pro Ile Ser Thr Ala Lys Val Glu Glu Leu Ile
 50 55 60
 His Glu Leu Lys Glu Arg Tyr Thr Ile Val Ile Val Thr His Asn Met
 65 70 75 80
 Gln Gln Ala Ala Arg Val Ser Asp Lys Thr Ala Phe Phe Tyr Met Gly
 85 90 95
 Gln Met Val Glu Phe Gly Asp Thr Lys Lys Ile Phe Thr Asn Pro Glu
 100 105 110
 Lys Glu Ala Thr Gln Asn Tyr Ile Thr Gly Arg Phe Gly
 115 120 125

<210> 9559
 <211> 451
 <212> PRT
 <213> B.fragilis

<400> 9559
 Leu Leu Phe Phe Phe Leu Ile Ser Asn Thr Arg Pro Met Asn Gln Arg
 1 5 10 15
 Leu Ser Asp Ile Trp Lys Phe Ile Thr Tyr Asp Ile Trp Arg Ile Thr
 20 25 30
 Glu Ser Glu Val Thr Arg Thr Lys Phe Ser Ile Tyr Asn Ile Ile Lys
 35 40 45
 Thr Ile Tyr Leu Cys Val Asn Arg Phe Asn Lys Asp Arg Ile Val Asn
 50 55 60
 Lys Ala Ser Ala Leu Thr Tyr Ser Thr Leu Leu Ala Ile Val Pro Ile
 65 70 75 80
 Leu Ala Ile Val Phe Ala Ile Ala Arg Gly Phe Gly Val Ser Thr Leu
 85 90 95
 Met Glu Ser Gln Phe Arg Asp Gly Phe Gly Gly Ser Thr Glu Ala Thr
 100 105 110
 Asp Ile Ile Leu Gln Phe Val Asp Ser Tyr Leu Ser Gln Thr Lys Asn
 115 120 125
 Gly Ile Phe Ile Gly Val Gly Leu Val Met Leu Leu Trp Thr Val Leu
 130 135 140
 Asn Leu Val Ser Asn Ile Glu Ile Thr Phe Asn Arg Ile Trp Gln Val
 145 150 155 160
 Lys Lys Gly Arg Ser Met Tyr Arg Lys Ile Thr Asp Tyr Phe Ser Met
 165 170 175
 Phe Leu Leu Met Pro Ile Leu Ile Val Val Ser Gly Gly Leu Ser Ile
 180 185 190
 Phe Val Gly Thr Met Leu Lys Ser Met Ala Asp Phe Val Leu Leu Ala

195 200 205
 Pro Ile Leu Lys Phe Leu Ile Arg Leu Ile Pro Phe Val Leu Thr Trp
 210 215 220
 Leu Met Phe Thr Gly Leu Tyr Ile Phe Met Pro Asn Thr Lys Val Lys
 225 230 235 240
 Phe Lys His Ala Leu Ile Ser Gly Ile Leu Ala Gly Ser Ala Tyr Gln
 245 250 255
 Ala Phe Gln Phe Leu Tyr Ile Ser Ser Gln Leu Trp Val Ser Lys Tyr
 260 265 270
 Asn Ala Ile Tyr Gly Ser Phe Ala Ala Leu Pro Met Phe Leu Leu Trp
 275 280 285
 Leu Gln Ile Ser Trp Thr Ile Cys Leu Phe Gly Ala Glu Leu Thr Tyr
 290 295 300
 Ala Gly Gln Asn Ile Arg Asn Phe Ser Phe Asp Arg Asp Thr Gln Asn
 305 310 315 320
 Ile Ser Arg Arg Tyr Arg Asp Phe Ile Ser Ile Leu Ile Met Ser Leu
 325 330 335
 Ile Ala Lys Arg Phe Glu Asn Asn Glu Thr Pro Tyr Thr Ala Glu Glu
 340 345 350
 Ile Ser Glu Glu His Arg Ile Pro Ile Arg Leu Thr Asn Gln Ile Leu
 355 360 365
 Tyr Gln Leu Gln Glu Ile His Leu Ile His Glu Val Val Thr Asp Gln
 370 375 380
 Lys Ser Glu Asp Ile Ala Tyr Gln Pro Ser Ile Asp Ile Asn Gln Leu
 385 390 395 400
 Asn Val Ala Leu Leu Leu Asp Arg Leu Asp Thr Tyr Gly Ser Glu Asp
 405 410 415
 Phe Lys Val Asp Lys Asp Glu Glu Phe Ser Glu Gln Trp Lys Val Leu
 420 425 430
 Leu Asp Ser Arg Glu Glu Tyr Tyr Lys Lys Ala Ser Lys Val Leu Leu
 435 440 445
 Lys Asp Leu
 450

<210> 9560

<211> 157

<212> PRT

<213> B.fragilis

<400> 9560

Leu Leu Lys Ile Lys Thr Asn Lys Lys Lys Thr Ile Met Lys Lys Leu
 1 5 10 15
 Leu Leu Leu Phe Val Cys Leu Phe Thr Leu Gln Thr Ile Ala Arg Ala
 20 25 30
 Asp Asp Asp Lys Pro Ile Gln Val Ser Gln Met Pro Gln Lys Ala Gln
 35 40 45
 Gln Phe Ile Lys Gln His Phe Ala Gly Ser Asn Ile Ala Met Ala Lys
 50 55 60
 Val Glu Ser Asp Phe Leu Gln Lys Ser Tyr Asp Val Ile Phe Thr Asp
 65 70 75 80
 Gly Asn Lys Val Glu Phe Asp Lys Lys Gly Asn Trp Thr Glu Val Asn
 85 90 95
 Cys Lys Phe Ser Val Val Pro Gln Gly Ile Ile Pro Ser Pro Ile Gln
 100 105 110
 Lys Tyr Thr Ala Thr Asn Tyr Pro Asp Ala Lys Val Leu Lys Ile Glu
 115 120 125
 Arg Asp Lys Thr Asp Tyr Glu Val Lys Leu Ser Asn Gly Trp Glu Leu
 130 135 140
 Lys Phe Asp Ser Lys Phe Asn Leu Ile Asp Ile Asp Asn

145

150

155

<210> 9561
 <211> 283
 <212> PRT
 <213> B.fragilis

<400> 9561

Lys	Ser	Ile	Val	Asp	Met	Lys	Leu	Lys	Met	Tyr	Phe	Leu	Leu	Leu	Ala
1				5					10					15	
Leu	Gly	Ala	Leu	Gly	Leu	Gln	Ser	Cys	Asn	Asp	Asp	Asp	Asp	His	Leu
			20					25					30		
Ser	Ser	Val	Pro	Thr	Glu	Leu	Lys	Asn	Ala	Phe	Thr	Glu	Lys	Tyr	Pro
		35					40					45			
Ser	Val	Ser	Asn	Glu	Lys	Trp	Glu	Thr	Lys	Gly	Asn	Tyr	Tyr	Ile	Ala
		50				55					60				
Glu	Phe	Arg	Gln	Gln	Asn	Tyr	Glu	Thr	Ser	Ala	Trp	Phe	Thr	Pro	Asn
65					70					75					80
Gly	Ile	Trp	Gln	Met	Thr	Glu	Thr	Asp	Leu	Pro	Tyr	Gln	Ala	Leu	Pro
				85				90						95	
Ala	Ala	Val	Lys	Ser	Ala	Phe	Glu	Ser	Ser	Glu	Tyr	Ala	Lys	Trp	Lys
			100					105					110		
Val	Asp	Asp	Val	Asp	Met	Leu	Glu	Arg	Pro	Asp	Met	Glu	Lys	Val	Tyr
		115					120					125			
Val	Ile	Glu	Val	Glu	Ser	Gly	Lys	Gln	Glu	Phe	Asp	Leu	Tyr	Tyr	Ser
		130				135					140				
Glu	Glu	Gly	Ile	Leu	Val	Lys	Ser	Val	Ala	Asp	Thr	Asp	Asn	Asp	Ser
145					150					155					160
Glu	Asn	Tyr	Leu	Pro	Ala	Glu	Ile	Pro	Ala	Ala	Ile	Glu	Thr	Phe	Ile
				165					170					175	
Lys	Lys	Gln	Tyr	Pro	Asn	Ala	Arg	Leu	Val	Glu	Ile	Glu	Val	Glu	His
			180					185					190		
Gly	Met	Thr	Glu	Val	Asp	Ile	Ile	Asp	Gly	Asn	Ile	Ser	Lys	Glu	Ile
		195					200					205			
Val	Phe	Asn	Ser	Ser	Asn	Glu	Trp	Ile	Ser	Thr	Ser	Trp	Asp	Val	Arg
		210				215					220				
Arg	Asn	Glu	Leu	Pro	Glu	Thr	Val	Thr	His	Ala	Ile	Ala	Ser	Ser	Glu
225					230					235					240
Lys	Tyr	Ala	Gly	Tyr	Gln	Ile	Asp	Asp	Ala	Asp	Phe	Val	Glu	Thr	Pro
				245					250					255	
Gly	Gly	Glu	Tyr	Tyr	Leu	Val	Glu	Leu	Glu	Lys	Gly	Glu	Leu	Glu	Val
		260					265						270		
Lys	Val	Lys	Val	Asn	Ala	Glu	Gly	Glu	Phe	Ile					
		275					280								

<210> 9562
 <211> 236
 <212> PRT
 <213> B.fragilis

<400> 9562

Ala	Phe	Ser	Leu	Gln	Val	Glu	Ile	Lys	Ser	Pro	Met	Lys	Ile	Leu	Ile
1				5					10					15	
Ile	Glu	Asp	Glu	Pro	Ser	Leu	Arg	Glu	Leu	Ile	Gln	Arg	Ser	Leu	Glu
			20					25					30		
Lys	Glu	Arg	Tyr	Val	Val	Glu	Ala	Ala	Ala	Asp	Phe	Gln	Ser	Gly	Leu
		35					40					45			
Arg	Lys	Ile	Glu	Asp	Tyr	Asp	Tyr	Asp	Cys	Val	Leu	Leu	Asp	Ile	Met
		50					55				60				

Leu Pro Asp Gly Asn Gly Leu Asn Leu Leu Glu Gln Leu Lys Lys Met
 65 70 75 80
 Arg Lys Arg Glu Asn Val Ile Ile Ile Ser Ala Lys Asp Ser Leu Asp
 85 90 95
 Asp Lys Val Leu Gly Leu Glu Leu Gly Ala Asp Asp Tyr Leu Pro Lys
 100 105 110
 Pro Phe His Leu Ala Glu Leu Asn Ala Arg Ile Lys Ser Val Ile Arg
 115 120 125
 Arg Gln Arg Arg Asp Gly Glu Met Asp Ile Arg Leu Ala Asn Ile Arg
 130 135 140
 Ile Val Pro Asp Thr Phe Gln Val Phe Val Asp Asp Lys Glu Ile Glu
 145 150 155 160
 Leu Asn Arg Lys Glu Tyr Asp Ile Leu Leu Tyr Phe Ala Asn Arg Pro
 165 170 175
 Gly Arg Leu Val Asn Lys Asn Thr Leu Ala Glu Ser Val Trp Gly Asp
 180 185 190
 His Ile Asp Gln Val Asp Asn Phe Asp Phe Ile Tyr Ala Gln Ile Lys
 195 200 205
 Asn Leu Arg Lys Lys Leu Lys Asp Ala Gly Ala Leu Ala Glu Leu Lys
 210 215 220
 Ala Val Tyr Gly Phe Gly Tyr Lys Met Thr Val Glu
 225 230 235

<210> 9563

<211> 94

<212> PRT

<213> B.fragilis

<400> 9563

Leu Ser Arg Thr His Ile Leu Ser Val Ile Gly Leu Tyr Leu Gly Cys
 1 5 10 15
 Lys Asn Ser Ile Glu Leu Thr Phe Lys Ser Glu Lys Asp Ile Met Arg
 20 25 30
 Cys Ile Asp Thr Val Thr Ile Thr Ile Ser Lys Met Glu Ile Asp Leu
 35 40 45
 Pro Lys Ile Glu Ile Val Lys Gln Cys Gly Met Ile Ala Ala Asn Thr
 50 55 60
 Val Phe Leu Ile Asn Ser Leu Thr Ser Asn Ile Pro Tyr Met Phe Leu
 65 70 75 80
 Asp Arg Leu Arg Gly Val Lys Val Thr Trp Asp Lys Ile Lys
 85 90

<210> 9564

<211> 385

<212> PRT

<213> B.fragilis

<400> 9564

Asp Ala Tyr Phe Leu Leu Ile Ile Ile Glu Leu Asn Met Lys Lys Ile
 1 5 10 15
 Ala Ile Val Thr Ala Ser Phe Ala Pro Ile Ser Thr Pro Arg Ala Asn
 20 25 30
 Arg Ala Thr Glu Leu Ala Lys Glu Phe Ala Lys Gln Gly Cys Leu Val
 35 40 45
 Thr Val Tyr Asn Cys Thr Ser Val Val Asp Gly Thr Phe Asn Ile Asn
 50 55 60
 Glu Asn Ile Arg Val Val Asp Leu Asn Ile Arg Lys Ala Ser Ile Met
 65 70 75 80
 Lys Ser Ser Thr Lys Asn Asn Val Thr Tyr Thr Ile Leu Asp Lys Gly

				85				90					95
Ile	Ile	Leu	Ile	Arg	Lys	Leu	Val	Tyr	Tyr	Phe	Phe	Leu	Gly
			100					105					110
Leu	Leu	Tyr	Leu	Phe	Gly	Leu	Lys	Lys	Lys	Leu	Arg	Phe	Asp
		115					120					125	Asp
Tyr	Asp	Leu	Leu	Ile	Ser	Ile	Gly	Leu	Pro	Phe	Thr	Ile	His
	130					135					140		Trp
Val	Ser	Leu	Arg	Ile	His	Gly	His	Asn	Ile	Ala	Arg	Cys	Tyr
145					150					155			Val
Asp	Tyr	Gly	Asp	Pro	Phe	Ser	Arg	Gly	Asn	Asp	Asn	Leu	Lys
				165					170				Cys
Lys	Tyr	Phe	Gln	Trp	Ile	Glu	Lys	Lys	Val	Ile	Asp	Lys	Phe
			180						185				Asp
Ile	Thr	Ile	Pro	Thr	Tyr	Asn	Ala	Ile	Asp	Ser	Tyr	Thr	Trp
		195					200					205	Leu
Ser	Ser	Asp	Cys	Ile	Lys	Val	Ile	Pro	Gln	Gly	Phe	Asn	Phe
	210					215					220		Ser
Val	Lys	Thr	Leu	Asp	Tyr	Val	Pro	Asn	Lys	Ile	Pro	Thr	Phe
225					230					235			Ile
Ala	Gly	Ile	Phe	Tyr	Ser	Asp	Ile	Arg	Asn	Pro	Lys	Asn	Leu
			245						250				Phe
Ile	Leu	Leu	Lys	Leu	Asp	Phe	Asp	Phe	Cys	Phe	Ile	Ile	Tyr
		260						265					Thr
Lys	Gly	Leu	Gln	Asp	Ser	Tyr	Ser	Cys	Ile	Lys	Pro	Tyr	Ile
		275					280					285	Asp
Leu	Gly	Ser	Lys	Leu	Val	Ile	Tyr	Asp	Ser	Ile	Pro	Arg	Leu
	290					295					300		Ala
Ile	Glu	Lys	Leu	Ser	Val	Ala	Asp	Phe	Leu	Ile	Asn	Met	Ser
305					310					315			Asn
Ser	Ala	Asn	Gln	Ile	Pro	Ser	Lys	Leu	Ile	Asp	Tyr	Ala	Leu
				325					330				Ser
Arg	Pro	Ile	Tyr	Ser	Cys	Thr	Pro	Asn	Ser	Ile	Asp	Leu	Asp
			340					345				350	Lys
Ile	Ser	Phe	Cys	Lys	Gly	Asp	Tyr	Thr	Gly	Ser	Glu	Asn	Ile
		355					360				365		Asn
Arg	Asp	Tyr	Asp	Ile	Thr	Thr	Ile	Val	Asn	Ser	Phe	Phe	Ser
	370					375					380		Leu
Gln													Met
385													

<210> 9565
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 9565
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly

	100		105		110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile					
	115		120		125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp					
	130		135		140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys					
145		150		155	160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile					
	165		170		175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val					
	180		185		190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu					
	195		200		205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys					
	210		215		220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr					
225		230		235	240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu					
	245		250		255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn					
	260		265		270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile					
	275		280		285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu					
	290		295		300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg					
305		310		315	320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe					
	325		330		335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe					
	340		345		350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn					
	355		360		365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu					
	370		375		380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val					
385		390		395	400
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr					
	405		410		415
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly					
	420		425		430

<210> 9566

<211> 208

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (186), (201), (203), (207)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9566

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe			
1	5	10	15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro			
	20	25	30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr			
	35	40	45

Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Gly Leu His Asn Gly Xaa Gly Ser Ile Ser Ile Val
 180 185 190
 Arg Ile Gln Gly Ala Ile Val Pro Xaa Pro Xaa Arg Ala Pro Xaa Pro
 195 200 205

<210> 9567
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 9567
 Arg His Asn Phe Phe Ser Phe Phe Thr Asn Val Thr Thr Thr Phe His
 1 5 10 15
 Ser Cys Phe Val Asp Gln His Cys Lys Asp Glu Asp Leu Gln Ile Ile
 20 25 30
 Gly Lys Gly Lys Asn Gly Pro Glu Ser Ser Phe Leu Arg Lys Thr Tyr
 35 40 45
 Asn Thr Leu Ile Ile Cys Ile Ile Ile Leu Ser Ser Ser Phe Lys Thr
 50 55 60
 Gly Ala Tyr Thr Cys Thr Gln Tyr Gln Leu Ser Phe Ser Ser Ser Asp
 65 70 75 80
 Lys Cys Ile Val Pro Ile Gln Lys Val Ser Gln
 85 90

<210> 9568
 <211> 317
 <212> PRT
 <213> B.fragilis

<400> 9568
 Val Met Tyr Tyr Leu Ile Ile Leu Val Leu Leu Phe Leu Ala Glu Leu
 1 5 10 15
 Phe Tyr Phe Arg Ile Ala Asp Lys Cys Asn Ile Ile Asp Lys Pro Asn
 20 25 30
 Glu Arg Ser Ser His Thr Arg Ile Thr Leu Arg Gly Gly Gly Ile Ile
 35 40 45
 Phe Phe Phe Gly Ala Leu Ala Tyr Phe Leu Thr Asn Gln Phe Glu Tyr
 50 55 60
 Pro Trp Phe Met Leu Ala Leu Thr Leu Ile Thr Phe Ile Ser Phe Val
 65 70 75 80
 Asp Asp Ile Arg Ser Thr Ser Gln Gly Leu Arg Leu Val Phe His Phe
 85 90 95
 Thr Ala Met Ala Leu Met Phe Tyr Gln Trp Gly Leu Phe Ser Leu Pro

Trp	Trp	Thr	Ile	Val	Val	Ala	Leu	Ile	Val	Cys	Thr	Gly	Ile	Ile	Asn
		115							120			125			
Ala	Tyr	Asn	Phe	Met	Asp	Gly	Ile	Asn	Gly	Ile	Thr	Gly	Gly	Tyr	Ser
	130					135					140				
Leu	Val	Val	Leu	Ala	Ala	Leu	Ala	Phe	Ile	Asn	Gly	Val	Tyr	Val	Pro
145					150					155					160
Phe	Val	Glu	Pro	Ala	Leu	Ile	Tyr	Thr	Met	Leu	Cys	Ala	Val	Leu	Val
				165					170					175	
Phe	Asn	Phe	Phe	Asn	Phe	Arg	Lys	Gln	Ala	Lys	Cys	Phe	Ala	Gly	Asp
			180					185					190		
Val	Gly	Ser	Val	Ser	Ile	Ala	Phe	Val	Ile	Leu	Phe	Leu	Ile	Gly	Met
		195				200						205			
Leu	Ile	Ile	Arg	Thr	Glu	Asn	Phe	Ser	Trp	Ile	Val	Leu	Leu	Ala	Val
	210					215					220				
Tyr	Gly	Val	Asp	Ser	Val	Leu	Thr	Ile	Ile	His	Arg	Leu	Met	Leu	His
225					230					235					240
Glu	Asn	Ile	Gly	Leu	Pro	His	Arg	Lys	His	Leu	Tyr	Gln	Ile	Met	Ala
				245					250					255	
Asn	Glu	Leu	Lys	Ile	Pro	His	Met	Val	Val	Ser	Leu	Val	Tyr	Met	Leu
			260					265					270		
Val	Gln	Ala	Val	Val	Ile	Ala	Gly	Tyr	Leu	Leu	Phe	Pro	Gly	Asn	Glu
		275					280					285			
Tyr	Gly	Tyr	Leu	Ser	Gly	Thr	Ile	Ile	Ala	Leu	Ser	Leu	Val	Tyr	Ile
	290					295					300				
Leu	Phe	Met	Lys	Arg	Phe	Phe	Cys	Leu	His	Gln	Ala	Lys			
305					310					315					

<210> 9569

<211> 253

<212> PRT

<213> B.fragilis

<400> 9569

Lys	Met	Ser	Leu	Glu	Val	Leu	Lys	Ile	Ser	Phe	Ile	Val	Val	Glu	Tyr
1			5						10					15	
His	Ser	Ile	Glu	Asp	Ile	Ile	Thr	Cys	Tyr	Ser	Ser	Ile	Ile	Gly	Ile
			20					25					30		
Ile	Pro	Ser	Asn	Trp	Gln	Cys	Glu	Val	Ile	Val	Ser	Ser	Asn	Ser	Val
			35				40					45			
Tyr	Pro	Leu	Lys	Gln	Gln	Glu	Glu	Leu	Lys	Thr	Leu	Tyr	Lys	Asp	Ile
	50					55				60					
Lys	Trp	Arg	Phe	Asn	Glu	Lys	Asn	Gly	Gly	Phe	Ala	Tyr	Ala	Met	Asn
65				70						75				80	
Gln	Gly	Leu	Ser	Ile	Ala	Asp	Gly	Asp	Ile	Leu	Val	Ile	Met	Asn	Pro
				85					90					95	
Asp	Val	Arg	Leu	Lys	Thr	Gly	Ile	Glu	Lys	Met	Val	Thr	Tyr	Leu	Tyr
			100					105					110		
Ser	His	Asn	Glu	Ile	Gly	Val	Ile	Ala	Pro	Lys	Ile	Ile	Asn	Ile	Asn
		115					120					125			
Gly	Lys	Ile	Gln	Asp	Ser	Phe	Arg	Asp	Phe	Ile	Thr	Pro	Met	Asn	Phe
	130					135					140				
Ile	Lys	Arg	His	Leu	Ser	Arg	Ile	Phe	Lys	Ser	Thr	Asn	Gln	Ile	Gly
145					150					155					160
Ile	Ile	Glu	Val	Ile	Ser	Gln	Val	Asp	Trp	Val	Ile	Gly	Ala	Phe	Met
				165					170					175	
Met	Met	Pro	Arg	Gln	Ala	Tyr	Glu	Val	Val	Lys	Gly	Leu	Asp	Glu	Tyr
			180				185						190		
Tyr	Phe	Leu	Tyr	Cys	Glu	Asp	Met	Asp	Phe	Cys	Lys	Arg	Ile	Gln	Leu

195	200	205
Glu Gly Phe Ser Val Val Tyr Tyr Pro Glu Ser Glu Ile Glu Tyr Glu		
210	215	220
Gly Thr Arg Ser Ala Arg Arg Ser Leu Lys Tyr Ala Cys Ile Phe Phe		
225	230	235
Lys Ser Leu Leu Arg Tyr Trp Thr Lys Phe Gly Phe Asn		
245	250	

<210> 9570
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 9570
His Val Gly Tyr Lys Phe Cys Val Asn Ser Ile Asp Ala Leu Ser Leu
1 5 10 15
Asn Lys Gly Lys Leu Glu Arg Asp Leu Thr Asn Arg Ser Asp Val Tyr
20 25 30
Met Pro Leu Glu Ser Ile Met Phe Ala Gly Tyr Asn Ala Tyr Val Phe
35 40 45
Ile Gly Asp Glu Leu Lys Ser Ala Thr Phe Lys Asp Thr Glu His Gln
50 55 60
Val Cys Arg Ser Ile Arg Lys Val Glu Asn Arg Thr Gly Glu Arg Phe
65 70 75 80
Lys Leu Ser Glu Arg Gly Gly Gln Leu Pro Arg
85 90

<210> 9571
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9571
Leu Ser Leu Gln His Cys Pro Val Val Thr Ala Glu Gly His Val Leu
1 5 10 15
Ile Phe Asp Asn Gly Tyr Gly Cys Asn Phe Ser Gly Ser Asn Arg His
20 25 30
Ser Arg Gly Glu Tyr Lys Ile Val Gly Leu Asp Val Glu Gln Ile Trp
35 40 45
Glu Tyr Gly Lys Glu Arg Gly Glu Asp Phe Phe Ser Pro Ile Thr Ser
50 55 60
Glu Val Gln Tyr Ile Glu Glu Ser
65 70

<210> 9572
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9572
Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
1 5 10 15
Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
20 25 30
Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
35 40 45
Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
50 55 60
Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser

65
Ser Ala Arg

70

75

80

<210> 9573
<211> 83
<212> PRT
<213> B.fragilis

<400> 9573
Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
1 5 10 15
Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
20 25 30
Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
35 40 45
Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
50 55 60
Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
65 70 75 80
Ser Ala Arg

<210> 9574
<211> 129
<212> PRT
<213> B.fragilis

<400> 9574
Asp Pro Leu Asn Ser Pro Ser Val Ser Ile Ile Ala Phe Pro Ile Ile
1 5 10 15
Gly Cys Ser Lys Asn Ile Phe Ile Pro Ser Ser Tyr Ile Arg Ser Leu
20 25 30
Pro Glu Asp Val Ser Lys Ala Leu Pro Ser Ser Lys Arg Val Ile Val
35 40 45
Arg Ser Ile Lys Gly Leu Leu Lys Tyr Ser Leu Lys Asn Lys Ser Ile
50 55 60
Leu Ser Lys Phe Ser Asn Ser Thr Met Lys Gln Lys Ala Val Val Lys
65 70 75 80
Ile Ile Leu Lys Phe Ser Phe Lys Gln Arg Tyr Asn Ala Lys Met Ala
85 90 95
Asn Asn Ala Thr Lys Gly Leu Leu Glu Phe Ala Asn Pro Ile Asp Thr
100 105 110
Asn Pro Lys Met Ile Gly Met Glu Lys Ser His Phe His Leu Phe Leu
115 120 125
Leu

<210> 9575
<211> 350
<212> PRT
<213> B.fragilis

<400> 9575
Asn Met Ile Asp Phe Lys Ile Lys Ile Ser Asp Arg Leu Lys Tyr Pro
1 5 10 15
Val Phe Cys Thr Ile Leu Ala Val Phe Ala Phe Asp Leu Arg Thr Phe
20 25 30
Phe Gly Ala Phe Leu Pro Ile Ser Leu Ile Thr Ser Val Val Leu Ile

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

<400> 9576															
Ser	Arg	Leu	Leu	Val	Ser	Gly	Ala	Leu	Lys	Tyr	Asp	Leu	Asn	Tyr	Thr
1				5					10					15	
Asp	Ser	Leu	Asn	Asn	Ser	Val	Phe	Pro	Asn	Thr	Asn	Phe	Val	Ser	Thr
			20					25					30		
Arg	Ile	Ile	Glu	Val	Asp	Ser	Lys	Asn	Asn	Val	Ser	Phe	Glu	Met	Leu
		35					40					45			
Tyr	Lys	Ser	Gln	Lys	Met	Asp	Met	Thr	Phe	Arg	Met	Gln	Lys	Met	
	50					55					60				

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<210> 9577
<211> 69
<212> PRT
<213> B.fragilis
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<400> 9577

Ser Leu Leu Arg Leu Arg Ile Arg Ser Thr Arg Phe Ala Gly Pro Tyr
 1 5 10 15
 Glu Lys Leu Lys Thr Ala Pro Glu Asn Val Ser Asn Tyr Leu Lys Glu
 20 25 30
 Ala Val Asn Tyr Leu Asp Lys Phe Gly Asn Glu Ile Phe Ala Tyr Leu
 35 40 45
 Lys Asp Gly Asn Tyr Pro Ile Asp Lys Asn Ser Ala Glu Arg Ser Ile
 50 55 60
 Arg Lys Leu Ile Thr
 65

<210> 9578

<211> 470

<212> PRT

<213> B.fragilis

<400> 9578

Val Asn Lys Leu Leu Lys Asn Trp Ser Tyr Leu Leu Leu Ser Asp Ile
 1 5 10 15
 Ser Gln Ser Val Ile Asn Phe Phe Val Phe Met Leu Leu Ala Arg Lys
 20 25 30
 Leu Thr Pro Val Gly Tyr Gly Glu Phe Asn Val Ile Leu Ala Ile Val
 35 40 45
 Ala Ile Phe Ser Val Val Ala Thr Asn Leu Gly Ala Asn His Val Ile
 50 55 60
 Thr Arg Glu Val Thr Leu His Pro Asp Asn Thr Lys Gly Ile Cys Tyr
 65 70 75 80
 Asn Val Ile Pro Leu Arg Leu Ile Ala Leu Ala Ile Ala Phe Leu Gly
 85 90 95
 Val Phe Val Tyr Ile Val Cys Gly Lys Asp Val Ser Phe Ser Ser Ser
 100 105 110
 Phe Tyr Ile Phe Ile Leu Ile Phe Ala Thr Ser Val Trp Asp Phe Ala
 115 120 125
 Glu Ser Val Ala Phe Gly Arg Leu Val Thr Lys Tyr Thr Thr Phe Phe
 130 135 140
 Asn Leu Ser Phe Ser Cys Ser Trp Leu Leu Phe Val Leu Phe Leu Pro
 145 150 155 160
 Glu Ser Tyr Phe Ser Ile Glu Val Val Leu Val Ile Tyr Ser Leu Leu
 165 170 175
 Phe Val Cys Lys Ser Ile Gly Tyr Leu Gly Arg Ser Cys Glu Lys Phe
 180 185 190
 Val Lys Thr Thr Leu Pro Val Ile Ser Leu Thr Lys Arg Ser Leu Phe
 195 200 205
 Met Met Ser Leu Pro Tyr Leu Trp Met Arg Val Phe Gly Ile Phe Gly
 210 215 220
 Glu Gln Ile Pro Ile Leu Ile Leu Asn Asn Lys Cys Gly Thr Asp Gln
 225 230 235 240
 Val Gly Tyr Phe Ser Val Gly Phe Arg Leu Ile Ile Pro Ile Thr Ile
 245 250 255
 Ala Ile Asn Thr Gly Leu Arg Ala Val Phe Pro Phe Met Thr Arg Ala
 260 265 270
 Tyr Thr Glu Asp Pro Lys Leu Phe Ser Glu Lys Leu Ile Lys Val Phe
 275 280 285
 Thr Phe Val Met Ile Trp Gly Thr Leu Val Ala Gly Ile Leu Val Leu
 290 295 300
 Phe Ser Glu Tyr Trp Ile Pro Phe Phe Leu Gly Lys Ser Tyr Leu Asn
 305 310 315 320

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

<400> 9579

<400> 9580

Arg	Ser	Ile	Gly	Leu	Ala	Arg	Met	Ser	Gln	Lys	Gly	Met	Ala	Glu	Lys
1				5					10					15	
Ser	Gly	Val	Ser	Leu	Ala	Thr	Ile	Ser	His	Phe	Glu	Gln	Gly	Val	Asn

	20		25		30										
Gln	Asn	Met	Thr	Leu	Asn	Asn	Phe	Ile	Ser	Leu	Leu	Arg	Ile	Ile	Gly
	35						40					45			
Met	Glu	Gln	Arg	Ile	Asn	Asp	Cys	Leu	Ser	Cys	Pro	Cys	His		
	50					55					60				

<210> 9581
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 9581
 Leu Thr Phe Ile Phe Leu Ile Val Phe Asn Pro Leu Phe Lys Leu Ile
 1 5 10 15
 Pro Ile Val Ile Ser Tyr Ser Asn Ser Cys Asn Ile His Ile Leu Phe
 20 25 30
 Leu Tyr Ile Asn Glu Arg Thr Pro Thr Ile His Cys Leu Ile Gly Leu
 35 40 45
 Phe Gly Ile Asn Pro Thr Thr Lys Lys Gly Asn Ile Asn Ser Ser Asn
 50 55 60
 Leu Arg Met Asn Asn Glu Ile Asn Lys Val Thr Asp Ile Ala Asn Lys
 65 70 75 80

<210> 9582
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9582
 Ile Lys Ile Ile Arg Thr Thr Asp Val Ile Arg Leu Ile Gly Arg Lys
 1 5 10 15
 Ala Pro Lys Lys Val Leu Lys Ser Lys Ala Lys Thr Ala Asn Ile Val
 20 25 30
 Gln Asn Thr Gly Tyr Phe Asn Leu Ser Glu Ile Leu Ile Leu Lys Ser
 35 40 45
 Ile Ile Phe Gln Tyr Ile Met Ile Tyr Ile Ile Asn
 50 55 60

<210> 9583
 <211> 305
 <212> PRT
 <213> B.fragilis

<400> 9583
 Asn Met Asn Ile Ala Ala Ile Thr Ile Thr Tyr Asn Asp Gly Tyr Lys
 1 5 10 15
 Phe Lys Glu Trp Val Glu His Tyr Gln Glu Tyr Lys Ser Glu Leu Tyr
 20 25 30
 Leu His Ile Ile Val Asp Asn Gly Ser Glu Asp Glu Tyr Met Ala Gln
 35 40 45
 Leu Lys Ser Thr Phe Thr Asp Ser Ile Ile Ile Glu Arg Gly Lys Asn
 50 55 60
 Gly Gly Cys Thr His Ala Tyr Asn Asp Gly Ile Arg Tyr Ala Leu Asn
 65 70 75 80
 Asp Lys His Val Asp Ala Ile Met Leu Ile Gly Asn Asp Ile Lys Leu
 85 90 95
 Ser Val His Gly Val Lys Gly Leu Tyr Asp Phe Leu Met Ser Asn Ala
 100 105 110
 Glu Tyr Gly Met Val Glu Pro Ile Leu Leu Ala Lys Asp Ser Asp Ile

115 120 125
 Val Glu Asp Phe Gly Asn Glu Ile Ser Arg Tyr Leu Gln Met Lys Pro
 130 135 140
 Phe Ala Val Gly Gln Asn Ile Gly Asn Leu Thr Gly Asp Glu Val Arg
 145 150 155 160
 Thr Val Phe Thr Val Thr Gly Gly Met Asn Leu Ala Lys Arg Glu Phe
 165 170 175
 Tyr Glu Ile Val Gly Leu Gln Asp Asp Leu Leu Phe Met Tyr Ser Asp
 180 185 190
 Glu Val Asp Met Gly Ile Arg Ala Lys His Cys Gly Phe Thr Met Ala
 195 200 205
 Val Thr Lys Asn Ile Gln Ala Trp His Gln His Ile Asn Pro Gly Gly
 210 215 220
 Thr Val Arg Arg Gln Met Tyr Thr Ser Tyr Leu Ile Gly Arg Asn Lys
 225 230 235 240
 Val Tyr Leu Ala Asn Lys His Phe Gly Arg Leu Arg Gln Val Glu Leu
 245 250 255
 Phe Leu Tyr His Phe Phe Leu Phe Ile Gly Gly Tyr Leu Lys Asn Ile
 260 265 270
 Arg Asn Arg Glu Ala Gln Ala His Leu Ile Gln Phe Ile Lys Gly Ser
 275 280 285
 Trp Asn Gly Leu Ile Gly Lys Met Ser Leu Val Gly Ile Ile Lys Gly
 290 295 300
 Tyr
 305

<210> 9584
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 9584
 Gly Ser Ile Leu Lys Tyr Leu Ser Leu Leu Pro Asn Gln Asn Tyr Ile
 1 5 10 15
 Pro Met Phe Ser Ser Gly Asp Met Ser Glu Asp Arg Lys Ser Arg Tyr
 20 25 30
 Ile Ser Tyr Leu Val Asp Tyr Val Asn Glu Thr Glu Leu Asp Lys Lys
 35 40 45
 Ala Leu Glu Leu Val Leu Glu Asp Phe Leu Ser Ala Trp Asn Asp Met
 50 55 60
 Lys Ala Glu Leu Ala Glu Leu Gln Arg Arg Gln Asp Glu Met Val Phe
 65 70 75 80
 Gln Thr Thr Gly Val Ser Leu
 85

<210> 9585
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 9585
 Arg Asn Ser Met Leu Tyr Phe Gly Ser Asp Glu Gly Val Glu Met Val
 1 5 10 15
 Ala Thr Tyr His Ser Leu Ile Ser Thr Val Lys Met Gln Gly Arg Phe
 20 25 30
 Val Trp Glu Phe Leu Ser Lys Phe Phe Thr Asn Ile Phe Asn Gly Cys
 35 40 45
 Arg Asp Tyr Leu Asn Leu Ser Pro Lys Ile Ser Asp Trp Thr Met Ala
 50 55 60

Ile Val Asn Lys Ser Leu Asn Leu Leu Thr Lys Gln Phe
 65 70 75

<210> 9586
 <211> 327
 <212> PRT
 <213> B.fragilis

<400> 9586

Leu Lys Gly Ile Glu Tyr Met Asp Ile Val Lys Asp Tyr Lys Lys Val
 1 5 10 15
 Ile Glu Ile Thr Leu Gly Glu Val Val Ala Ser Pro Asp Phe Phe Val
 20 25 30
 Ser Val Gly Ala Ile Asp Tyr Gly Tyr Ile Ile Asp Asn Gly Cys Ile
 35 40 45
 Leu Pro Phe Tyr Ile Lys Lys Lys Phe Leu Phe Arg Tyr Met Ile Phe
 50 55 60
 Ser Thr Gly Ile Leu Asn Cys Ser Ser Ser Glu Gln Glu Gln Val Phe
 65 70 75 80
 Leu Asp Arg Leu Ile Pro Phe Val Lys Glu Ser Phe Lys Ile Asp Phe
 85 90 95
 Ile Leu Ser Gln His Val Asn Ala Leu Phe Ser Ile Val Pro Pro Arg
 100 105 110
 Ser Gln Tyr Cys Leu Phe Gly Ser Tyr Ile Leu Asp Leu Ser Leu Thr
 115 120 125
 Glu Asp Asp Ile Trp Ala Lys Met His Ser Lys His Arg Asn Val Ile
 130 135 140
 Arg Lys Ala Glu Lys Asp Gly Val Ile Ile Thr Cys Gly Asp Asp Asn
 145 150 155 160
 Lys Glu Glu Cys Ile Lys Leu Val Gln Asn Thr Leu Leu Arg Gln Gly
 165 170 175
 Ile Ala Pro Ile Asn Asp Asn Val Phe Ser Asn Leu Gly Asn Val Lys
 180 185 190
 Tyr Val Asp Tyr Trp Leu Ala Thr Leu Asn Asn Gly Ile Glu Gly Gly
 195 200 205
 Ala Ile Ile Tyr Trp His Pro Asn Cys Gly Ala Tyr Tyr Met Tyr Gly
 210 215 220
 Gly Ser Gly Glu Lys Pro His Thr Gly Ser Met Asn Leu Leu Gln Trp
 225 230 235 240
 Asn Val Ile Lys Lys Met Lys Glu Asn Asn Val Lys Phe Tyr Asp Phe
 245 250 255
 Met Gly Ala Arg Met Asn Pro Glu Val Gly Ser Lys Tyr Glu Gly Ile
 260 265 270
 Gln Arg Phe Lys Glu Arg Phe Gly Gly Glu Leu Lys Lys Gly Tyr Leu
 275 280 285
 Trp Lys Tyr Ser Leu Asn Asp Phe Lys Tyr Trp Leu Tyr Arg Leu Leu
 290 295 300
 Val Phe Ile Tyr Ser Lys Gly His Phe His Gly Asp Ile Ile Asp Gln
 305 310 315 320
 Glu Arg Lys Arg Gly Asn Ile
 325

<210> 9587
 <211> 338
 <212> PRT
 <213> B.fragilis

<400> 9587

Trp Asn Leu Met Asn Ile Leu Ile Thr Gly Ala Tyr Gly Phe Val Gly

1 5 10 15
 Thr Asn Leu Ile Asn Asn Leu Lys Ile Lys His Asn Leu Tyr Gly Leu
 20 25 30
 Asp Ile Val Cys Pro Thr Arg Glu Gly Val Leu Lys Thr Phe Tyr Trp
 35 40 45
 Lys Asp Ile Asn Pro Glu Ser Phe Ser Leu Gln Asn Leu Pro Lys Phe
 50 55 60
 Asp Ala Ile Ile His Leu Ala Gly Lys Ala His Asp Thr Lys Asn Gln
 65 70 75 80
 Ser Ala Ala Gln Ser Tyr Phe Asp Ile Asn Thr Ser Leu Thr Gln Lys
 85 90 95
 Ile Phe Asp Phe Phe Leu Glu Ser Ser Ala Lys Lys Phe Ile Phe Phe
 100 105 110
 Ser Ser Val Lys Ala Ala Ala Asp Ser Val Val Gly Asp Met Leu Thr
 115 120 125
 Glu Asp Val Ile Pro Ala Pro Val Gly Pro Tyr Gly Glu Ser Lys Ile
 130 135 140
 Arg Ala Glu Glu Tyr Ile Lys Glu His Phe Ala Phe Pro Ala Val Ser
 145 150 155 160
 Pro Cys Glu Cys Ser Pro Phe Arg Glu Met Thr Ser Val Thr Glu Lys
 165 170 175
 Gln Val Tyr Ile Leu Arg Pro Cys Met Ile His Gly Pro Gly Asn Lys
 180 185 190
 Gly Asn Leu Asn Leu Leu Tyr Asn Val Val Lys Lys Gly Ile Pro Trp
 195 200 205
 Pro Leu Gly Asp Phe Glu Asn Arg Arg Ser Phe Thr Ser Ile Asp Asn
 210 215 220
 Leu Cys Tyr Val Ile Glu Gly Leu Leu Thr Lys Glu Val Pro Thr Gly
 225 230 235 240
 Ile Tyr His Met Gly Asp Asp Glu Ala Leu Ser Thr Asn Glu Leu Ile
 245 250 255
 Ala Ile Met Cys Glu Ala Met Gly Lys Gln Pro His Ile Trp Lys Met
 260 265 270
 Asn Lys Gly Phe Met Glu Gly Cys Ala Gly Leu Gly Thr Leu Leu His
 275 280 285
 Leu Pro Leu Asn Thr Glu Arg Leu Arg Lys Leu Thr Glu Asn Tyr Val
 290 295 300
 Val Ser Asn Ala Lys Ile Lys Ala Ala Leu Gly Ile Asp Lys Met Pro
 305 310 315 320
 Val Thr Ala Lys Glu Gly Leu Ile Lys Thr Ile Arg Ser Phe Glu Glu
 325 330 335
 Thr Lys

<210> 9588

<211> 69

<212> PRT

<213> B.fragilis

<400> 9588

Gly His Thr Val Asp Gly Val Cys Ser Ser Ser Thr His Arg Thr Asp
 1 5 10 15
 Asp Ile Glu Gly Lys Ile Asp Arg His Ala Tyr Arg Pro Thr Asp Met
 20 25 30
 Arg Gly Val Leu Ile Lys Tyr Tyr Asp Ile Thr Val Gly Cys Ser Leu
 35 40 45
 Val Ile Glu Gly Pro Ala Glu Val Ala Leu His Trp Met Thr Gly Arg
 50 55 60
 Arg Thr Arg Glu Phe

65

<210> 9589
 <211> 345
 <212> PRT
 <213> B.fragilis

<400> 9589

Tyr Met Thr Val Lys Lys Cys Val Leu Thr Leu Asp Tyr Glu Leu Phe
 1 5 10 15
 Phe Asp Lys Ser Gly Thr Pro Gln Val Ser Met Leu Asn Pro Thr Asp
 20 25 30
 Leu Leu Leu Asn Val Leu Glu Glu Thr Ser Ser Lys Ala Thr Phe Phe
 35 40 45
 Ile Asp Thr Ile Tyr Leu Asn Lys Leu Arg Asn Ser Asn Asp Ile Lys
 50 55 60
 Asn Lys Ile Leu Phe Asp Asn Ile Val Asn Gln Leu Lys Arg Ile Val
 65 70 75 80
 Lys Gln Gly Ser Arg Ile Glu Leu His Leu His Pro His Trp Ile Asp
 85 90 95
 Ala Tyr Gln Asn Gly Asp Gln Trp Val Phe Pro Ser Tyr Ala His Tyr
 100 105 110
 Lys Leu Gly Ser Leu Ser Asp Glu Thr Val Glu Cys Leu Phe Lys Glu
 115 120 125
 Gly Ile Leu Leu Leu Asn Glu Ile Ala Gln Ser Val Asp Arg Asp Tyr
 130 135 140
 Arg Ile Met Ala Phe Arg Ala Gly Gly Trp Cys Val Glu Pro Phe Thr
 145 150 155 160
 Lys Leu Arg Asn Leu Phe Val Ala Asn Asn Ile Leu Ile Asp Ser Ser
 165 170 175
 Val Val Ser Gly Met Lys Phe Ser Gly Glu Val His Asn Ile Asp Tyr
 180 185 190
 Ser Ser Ile Leu Pro Asn Thr His Tyr Tyr Phe Ser Asp Ser Val Tyr
 195 200 205
 Glu Gln Asn Ser Thr Gly Val Phe Leu Glu Ile Pro Ile Asn Gly Tyr
 210 215 220
 Gln Leu Ser Ala Leu Asn Lys Ile Val Trp Lys Met Lys Ser Ile Leu
 225 230 235 240
 Ala Gly Glu Lys Ala Lys Ile Tyr Gly Asp Gly Val Gly Met Gln Ser
 245 250 255
 Val Glu His Gln Thr Ile Leu Asn Lys Ile Leu Lys Leu Phe Val Gly
 260 265 270
 Gln Gly Gln Tyr Val Gln Tyr Ser Leu Asp Gly Tyr Ile Asp Ser Asp
 275 280 285
 Asn Leu Asn Asn Ala Ile Asn Asn Ser Lys Leu Ser Phe Ile Ser Leu
 290 295 300
 Val Ala His Pro Lys Thr Leu Thr Lys Ser Ser Leu Asp Ala Ile Lys
 305 310 315 320
 Tyr Leu Thr Asn Val Gly Cys Ser Phe Val Ser Ile Asp Asn Ile Tyr
 325 330 335
 His Asp Ile Leu Lys Tyr Asp Arg Phe
 340 345

<210> 9590
 <211> 238
 <212> PRT
 <213> B.fragilis

<400> 9590

Met Ile Ser Val Cys Ile Ala Thr Tyr Asn Gly Ser Lys Tyr Ile Lys
 1 5 10 15
 Glu Gln Ile Asp Ser Ile Leu Pro Gln Leu Asp Glu Cys Asp Glu Ile
 20 25 30
 Ile Val Ser Asp Asp Ser Ser Thr Asp Asn Thr Leu Ser Ile Leu Lys
 35 40 45
 Ser Tyr His Asp Arg Arg Ile Ile Ile Phe Thr Asn Gln Lys Phe Asn
 50 55 60
 Ser Pro Ile Tyr Asn Phe Glu Asn Ala Leu Lys His Ala Lys Gly Asp
 65 70 75 80
 Ile Ile Phe Leu Ser Asp Gln Asp Asp Ile Trp Glu Phe Asn Lys Val
 85 90 95
 Gln Val Met Ile Ser Phe Leu Gln Lys Lys Ser Leu Val Val Ser Asp
 100 105 110
 Cys Tyr Ile Ile Asn Gln Asp Lys Asn Val Ile Cys Asp Ser Leu Phe
 115 120 125
 Asn Gly Lys Val Pro Asn Ala Gly Val Phe Ile Asn Ile Leu Arg Asn
 130 135 140
 His Tyr Ile Gly Cys Cys Met Ala Phe Arg Arg Glu Ile Leu Asn Ala
 145 150 155 160
 Ala Leu Pro Phe Pro Ser Ser Leu Ala Met His Asp Ile Trp Leu Gly
 165 170 175
 Leu Cys Ala Ser Ala Phe Tyr Ser Ala Val Phe Ile Pro Asn Arg Leu
 180 185 190
 Ile Lys Tyr Arg Arg His Asn Thr Asn Ala Ser Pro Thr Leu Glu Asn
 195 200 205
 Ser Asn Leu Pro Leu Leu Tyr Arg Val Gln Tyr Arg Trp Thr Leu Ile
 210 215 220
 Ile Ala Leu Val Arg Arg Ala Leu Lys Ile Ser Lys His Leu
 225 230 235

<210> 9591

<211> 267

<212> PRT

<213> B.fragilis

<400> 9591

Tyr Ser Leu Thr Met Lys Ser Ser Met Ala Met Ile Lys His Lys Lys
 1 5 10 15
 Glu Leu Val Glu Tyr Ala Arg His Leu Lys Leu Pro Asn Leu Ala Glu
 20 25 30
 His Val Gly Val Ile Leu His Glu Ala Gln Glu Lys Gln Leu Thr Tyr
 35 40 45
 Ser Glu Phe Leu Ala Asn Cys Leu Ala Arg Glu Ile Gln Gly Arg Glu
 50 55 60
 Arg Lys Ser Tyr Leu Thr Arg Leu Lys Leu Ser Gly Leu Pro Ala Lys
 65 70 75 80
 Tyr Asp Leu Asp Leu Tyr Asp Tyr Asp Arg Ala Glu Gly Met Asp Asn
 85 90 95
 Arg Arg Leu Arg Glu Leu Arg Glu Leu Val Trp Val Asn Gln Ala Tyr
 100 105 110
 Asn Leu Leu Leu Val Gly Pro Ser Gly Thr Gly Lys Thr Phe Ile Ala
 115 120 125
 Ala Gly Leu Val Tyr Glu Ala Val Lys Ala Gly Tyr Glu Ala Tyr Leu
 130 135 140
 Met Thr Leu Glu Glu Leu Leu Thr Cys Leu Lys Thr Lys Glu Val Ser
 145 150 155 160
 Ala His Ala Met Lys Thr Tyr Lys Arg Ile Met Lys Ala Arg Leu Leu
 165 170 175

Ala	Ile	Asp	Asp	Ala	Thr	Leu	Phe	Pro	Leu	Lys	Arg	Glu	Glu	Ala	Val
		180						185					190		
Leu	Leu	Phe	Lys	Leu	Val	Asn	Asp	Phe	Gln	Glu	Arg	Thr	Ser	Leu	Ile
		195					200					205			
Ile	Thr	Ala	Asn	Lys	Ala	Leu	Thr	Arg	Trp	Leu	Glu	Thr	Leu	Glu	Asp
	210					215					220				
Glu	Ala	Val	Thr	Ala	Ala	Leu	Leu	Asp	Arg	Leu	Leu	Tyr	Cys	Cys	Glu
225					230					235					240
Ile	Ile	Arg	Leu	Gly	Thr	Ser	Tyr	Arg	Met	Gln	Asn	Arg	Lys	Thr	
			245					250					255		
Ile	Phe	Ser	Asn	Gln	Asn	Thr	Asp	Ile	Gly	Thr					
			260					265							

<210> 9592

<211> 333

<212> PRT

<213> B.fragilis

<400> 9592

Arg	Pro	Asp	Thr	Gly	Met	Glu	Thr	Lys	Ser	Gln	Asn	Leu	Lys	Asp	Lys
1			5					10						15	
Leu	Tyr	Met	Trp	Tyr	Lys	Val	Arg	Glu	Leu	Gln	Ser	Lys	Gly	Leu	Ser
		20					25					30			
Lys	Thr	Gln	Ile	Gly	Lys	Tyr	Leu	Gly	Val	Asp	Arg	Ser	Thr	Val	Arg
	35					40					45				
Arg	Tyr	Leu	Arg	Thr	Ser	Arg	Glu	Glu	Phe	Phe	Arg	Lys	Gln	Asn	Ser
	50					55				60					
His	Arg	Glu	Tyr	Glu	Leu	Lys	Leu	Gly	Lys	Tyr	Glu	Glu	Tyr	Val	Arg
65					70				75					80	
Gly	Thr	Leu	Glu	Glu	Tyr	Pro	Tyr	Ile	Ser	Ala	Ala	Arg	Met	His	Asp
			85					90						95	
Trp	Leu	Arg	Glu	Cys	Tyr	Pro	Asp	Phe	Pro	Arg	Val	Cys	Asp	Lys	Thr
			100					105					110		
Val	Phe	Asn	Phe	Val	Asp	Arg	Ile	Arg	Arg	Lys	Tyr	Gly	Ile	Gly	Lys
		115					120					125			
Lys	Ser	Glu	Ala	Arg	Ile	Arg	Asp	Tyr	Glu	Lys	Leu	Pro	Glu	Thr	
	130					135				140					
Pro	Tyr	Gly	Glu	Tyr	Ala	Gln	Ala	Asp	Phe	Gly	Glu	Lys	Trp	Ile	Pro
145					150				155						160
Val	Lys	Asn	Gly	Gly	Ser	Thr	Lys	Val	Tyr	Phe	Phe	Ala	Ile	Val	Leu
			165					170						175	
Thr	Arg	Ser	Arg	Tyr	Lys	Phe	Ile	His	Phe	Ser	Arg	Arg	Pro	Phe	Asp
			180					185					190		
Thr	Glu	Leu	Ala	Ile	Tyr	Ala	His	Glu	Leu	Ala	Phe	Gln	Tyr	Phe	Gly
		195				200						205			
Gly	Arg	Pro	Glu	Lys	Ile	Ile	Tyr	Asp	Gln	Asp	Arg	Val	Leu	Ile	Ala
	210					215					220				
Arg	Glu	Asn	Leu	Gly	Asp	Leu	Ile	Leu	Thr	Gly	Lys	Phe	Gln	Ser	Phe
225					230					235					240
Ile	Lys	Glu	Gln	His	Phe	Gln	Pro	Val	Phe	Cys	Arg	Arg	Ser	Asp	Pro
				245					250					255	
Glu	Ser	Lys	Gly	Lys	Val	Glu	Asn	Val	Val	Lys	Tyr	Val	Lys	Glu	Asn
		260						265					270		
Phe	Leu	Val	Ala	Arg	Val	Leu	Gln	Asp	Ile	Pro	Gly	Leu	Asn	Glu	Glu
		275					280					285			
Ala	Arg	Lys	Trp	Leu	Glu	Arg	Thr	Gly	Asn	Gly	Lys	Val	His	Gly	Thr
	290					295					300				
Thr	Arg	Leu	Val	Pro	Ser	Glu	Glu	Phe	Ala	Val	Glu	Lys	Gly	Tyr	Leu
305					310					315					320

Asn Leu Ile Met Val Tyr Pro Ser His His Arg Ser Arg
 325 330

<210> 9593

<211> 592

<212> PRT

<213> B.fragilis

<400> 9593

Lys Ser Gly Ala Gln Ile Cys Ala Pro His Pro Ile Ser Lys Leu Leu
 1 5 10 15
 Arg Leu Val Met Leu Leu Ala Val Val Leu Leu Leu Ser Ser Cys Arg
 20 25 30
 Gln Asp Asp Asp Ser Tyr Ser Ser His Pro Gly Pro Thr Thr Leu Val
 35 40 45
 Ser Leu Ser Val Ser Ala Ser Asn Ser Gly Ala Val Ala Ala Ser Asp
 50 55 60
 Asp Pro Ala Ser Ser Ile Arg Asp Leu Cys Ile Leu Gln Phe Asn Val
 65 70 75 80
 Asn Gly Thr Gly Phe Gly Asn Leu Arg His Val Ala Lys Gly Ser Pro
 85 90 95
 Ala Ser Ala Gly Thr Phe Asn Ala Thr Leu Leu Gln Ser Val Asn Pro
 100 105 110
 Asp Asp Lys Tyr Lys Leu Val Leu Leu Ala Asn Leu Pro Asp Tyr Gly
 115 120 125
 Phe Leu Asn Ser Leu Ser Gly Lys Ser Tyr Asp Gln Val Gln Lys Thr
 130 135 140
 Leu Leu Ser Glu Glu Leu Ser Gly Arg Asn Asn Ile Pro Ser Phe Asp
 145 150 155 160
 Gly Ser Arg Pro Phe Gln Met Phe Gly Val Ala Asn Ser Gly Asn Ser
 165 170 175
 Ile Glu Ile Thr Glu Asn Met Ser Leu Ser Asp Val Ser Leu Ile Arg
 180 185 190
 Gly Val Ala Arg Val Asp Ile Gly Ile Gly Ile Lys Asn Ala Asp Asp
 195 200 205
 Thr Trp Asn Lys Asn Gly Val Lys Phe Asn Met Thr Gln Ile Gln Ile
 210 215 220
 Trp Lys Ala Gly Lys Gln Tyr Ala Tyr Met Pro Ser Glu Asn Asn Phe
 225 230 235 240
 Ser Ser Thr Gly Arg Val Asp Gly Val Thr Ile Thr Gly Pro Ser Pro
 245 250 255
 Val Gly Thr Thr Glu Thr Lys Val Tyr Asp Ile Thr His Ile Ile Asn
 260 265 270
 Asn Thr Tyr Cys Cys Gly Lys Ile Tyr Leu Pro Glu Ala Asp Leu Asn
 275 280 285
 Trp Gly Asp Val Tyr Asp Ala Ser His Thr Asp Arg Leu Ala Val Ile
 290 295 300
 Val Gly Gly Lys Tyr Asn Gly Ser Gln Thr Glu Thr Phe Tyr Arg Val
 305 310 315 320
 Asp Phe Lys Asn Asp Val Ser Gly Glu Lys Met Asp Ile Leu Arg Asn
 325 330 335
 His Val Tyr Arg Phe Thr Val Thr Lys Val Thr Asp Asp Gly Tyr Asp
 340 345 350
 Thr Ala Glu Leu Ala Tyr Lys Ser Ile Pro Lys Asp Ile Ser Phe Thr
 355 360 365
 Ala Glu Leu Thr Pro Trp Thr Phe Pro Pro Ala Val Ser Val Pro Ser
 370 375 380
 Ile Ile Gly Tyr Arg Met Val Tyr Gln Asn Thr Asn Gly Gly Met Leu
 385 390 395 400

Leu Trp Asn Thr Ala Thr Gly Leu Thr Ile Pro Lys Lys Arg Asp Thr
 405 410 415
 Trp Lys Gly Thr Lys Met Asn Phe Asn Tyr Asn Gly Phe Tyr Asp Glu
 420 425 430
 Thr Asn Asn Ala Tyr Ala Ile Thr Tyr Pro Ile Glu Pro Arg Asn Gly
 435 440 445
 Ser Leu Tyr His Thr Ile Glu Val Ala Phe Asp Tyr Glu Gly Val Tyr
 450 455 460
 Pro Ser Leu Met Val Ser Ala Asp Asp Val Thr Asp Val Thr Gly Gly
 465 470 475 480
 Asp Thr Asn Pro Trp Lys Thr Gly Lys Thr Leu Thr Ala Phe Asp Ile
 485 490 495
 Cys Arg Asn Tyr Glu Gly Asp Gly Phe Gly Asp Trp Arg Leu Pro Arg
 500 505 510
 Leu Ser Glu Leu Ala Leu Leu Tyr Leu Asn Arg Gly Ser Leu Glu Ala
 515 520 525
 Met Arg Gly Phe Ala Pro Leu Ser Gly Thr Tyr Trp Ser Gly Ser Glu
 530 535 540
 Tyr Leu Val Ser Asp Ser Lys Val Asp Lys Arg His Ser Glu Gln Ala
 545 550 555 560
 Trp Gly Ile Asn Phe Asp Ala Thr Asn Pro Gly Asn Ala Ala Pro Tyr
 565 570 575
 Asp Lys Thr Thr Lys Lys Phe Lys Ile Arg Cys Val Arg Gln Thr Gln
 580 585 590

<210> 9594

<211> 64

<212> PRT

<213> B.fragilis

<400> 9594

Gln Pro Lys His Gly Tyr Arg His Val Lys Arg Val Lys Glu Ser Glu
 1 5 10 15
 Ala Ser Ser Met Leu Glu Trp Asp Ile Leu Asn Tyr Leu Lys Lys Trp
 20 25 30
 Arg Thr Asn Leu Arg Ala Thr Pro Tyr Ile Glu Val Thr Ser Val Gly
 35 40 45
 Asn Ala Pro Cys Gly Gly Ala Val Ile Val Phe Leu Pro Ser Gly Arg
 50 55 60

<210> 9595

<211> 214

<212> PRT

<213> B.fragilis

<400> 9595

Gly Val Arg Cys Gly Lys Arg Ile Pro Glu Pro Tyr Tyr Gly Leu Pro
 1 5 10 15
 Glu Pro Pro Gln Glu Gln Met Lys Glu Tyr His Val Arg Lys Asp Asn
 20 25 30
 Thr Val Gln Tyr Arg Gly Asn Tyr Tyr Ser Leu Pro Cys Gly Thr Tyr
 35 40 45
 Arg Ser Gly Gln Thr Arg Val Trp Leu Gln Glu Thr Glu Gly Tyr Val
 50 55 60
 Glu Leu Tyr Ser Lys Glu Thr Gly Lys Ile Val Ala Arg His Pro Leu
 65 70 75 80
 Cys Thr Arg Lys Gly Lys Thr Ile Tyr Asp Glu Arg His Arg Arg Pro
 85 90 95
 Lys Ser Ile Gly Ala Gln Lys Leu Ala Glu Arg Ile Leu Val Tyr Val

100	105	110
Ser Gly Asn Arg Glu Val Ala Leu Trp Met Glu Asn Leu Lys Arg Lys		
115	120	125
Lys Glu Arg Tyr Tyr Lys Asp Asn Leu Glu Val Val Leu His Met Met		
130	135	140
Pro Gly Tyr Asp Lys Asp Ile Leu Ile Glu Ala Val His Ile Cys Leu		
145	150	155
Asp Lys Gly Ile Tyr Asn Gly Asp Ser Val Lys Ser Leu Cys Glu His		
165	170	175
Val His Arg Arg Arg Asn Lys Glu Thr Glu Thr Asp Arg Thr Asp Ser		
180	185	190
Cys Pro Pro Arg Gln Thr Gly Leu Ile Gln Ser Tyr Asn Glu Ile Phe		
195	200	205
His Gly Tyr Asp Lys Thr		
210		

<210> 9596

<211> 123

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (122), (123)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9596

Asn Pro Val Cys Thr Thr Asn Ala Val Asn Glu Lys Ile Ser Tyr Thr		
1	5	10
Ile Asn Met Asp Thr Gln Lys Lys His Asn Leu Ser Gly Thr Ile Ile		
20	25	30
Leu Val Ser Cys Phe Leu Leu Leu Ala Gly Ala Cys Asp Asn Ser Asp		
35	40	45
Arg Ile Glu Thr Glu Thr Gln Ala Asn Gly Val Leu Leu Asn Phe Asn		
50	55	60
Ala Ser Thr Ile Asp Ala Thr Thr Thr Glu Thr Arg Ser Phe Val Pro		
65	70	75
Ile Glu Gly Phe Ala Lys Asn Glu Tyr Ile Phe Gly Met Ser Val Thr		
85	90	95
Lys Asp Asn Ala Ser Arg Gly Glu Ile Phe Glu Gly Cys Ser Met Val		
100	105	110
Val Ser Gly Gly Arg Ser Arg Gly Gln Xaa Xaa		
115	120	

<210> 9597

<211> 72

<212> PRT

<213> B.fragilis

<400> 9597

Tyr Val Pro Phe Phe Phe His Lys Pro Tyr Gly Asp Ile Gly Ser Ser		
1	5	10
Asp Gly Gly Lys Ala Thr Lys Asn Leu Arg Asn Asp Gln Gly Ile Ala		
20	25	30
Ser Val Cys Lys Gln Gly Pro Leu Tyr His Lys Asp Gly Ile Arg		
35	40	45
Ile Pro Tyr Lys Gly Asp Phe Lys Asn Asn Pro His Thr Leu Leu Leu		
50	55	60
Gln Gln Glu Met Ile Arg Glu Asn		

65

70

<210> 9598
 <211> 752
 <212> PRT
 <213> B.fragilis

<400> 9598

Tyr	Pro	His	Pro	Met	Thr	Ile	Glu	Glu	Ile	Lys	Asn	Gln	Val	Leu	Gln
1				5					10					15	
Gly	Thr	Ala	Ile	Ser	Arg	Glu	Gln	Ala	Gly	Trp	Leu	Ala	Leu	Tyr	Pro
			20				25						30		
Arg	Lys	Glu	Glu	Leu	Tyr	Asp	Ala	Ala	His	Glu	Ile	Thr	Thr	Ala	Cys
		35					40					45			
Ala	Ser	Gln	Glu	Phe	Asp	Met	Cys	Ser	Ile	Ile	Asn	Ala	Arg	Ser	Gly
	50					55					60				
Arg	Cys	Pro	Glu	Asn	Cys	Lys	Trp	Cys	Ala	Gln	Ser	Ser	His	Tyr	Lys
65					70					75					80
Thr	Lys	Ala	Asp	Val	Tyr	Asp	Leu	Val	Ser	Ala	Glu	Glu	Cys	Leu	Arg
				85					90					95	
Gln	Ala	Lys	Tyr	Asn	Glu	Ala	Gln	Gly	Val	Asn	Arg	Phe	Ser	Leu	Val
			100					105						110	
Thr	Ser	Gly	Arg	Lys	Pro	Ser	Pro	Lys	Asn	Met	Lys	Glu	Leu	Cys	Val
		115					120					125			
Ala	Val	Arg	Arg	Met	Arg	Arg	His	Ser	Ser	Ile	Arg	Leu	Cys	Ala	Ser
		130					135				140				
Leu	Gly	Leu	Leu	Asp	Glu	Glu	Glu	Leu	Gln	Ala	Leu	Tyr	Asp	Ala	Gly
145					150					155					160
Val	Thr	Arg	Tyr	His	Cys	Asn	Leu	Glu	Thr	Ala	Pro	Ser	His	Phe	Asp
				165					170					175	
Ser	Leu	Cys	Thr	Thr	His	Thr	Gln	Glu	Gln	Lys	Leu	Lys	Thr	Leu	Tyr
			180					185					190		
Ala	Ala	Arg	Arg	Val	Gly	Met	Asp	Leu	Cys	Cys	Gly	Gly	Ile	Ile	Gly
		195					200					205			
Met	Gly	Glu	Thr	Val	Glu	Gln	Arg	Ile	Glu	Phe	Ala	Phe	Thr	Leu	Arg
	210					215					220				
Asp	Leu	Asn	Ile	Gln	Ser	Ile	Pro	Ile	Asn	Leu	Leu	Gln	Pro	Ile	Pro
225					230					235					240
Gly	Thr	Pro	Leu	Glu	His	Gln	Ser	Pro	Leu	Ser	Glu	Glu	Glu	Ile	Leu
				245					250					255	
Thr	Thr	Val	Ala	Leu	Phe	Arg	Phe	Ile	Asn	Pro	Ala	Ala	Tyr	Leu	Arg
			260					265					270		
Phe	Ala	Gly	Gly	Arg	Ser	Gln	Leu	Thr	Pro	Glu	Ala	Val	Arg	Lys	Ser
		275					280					285			
Leu	Tyr	Ile	Gly	Ile	Asn	Ser	Ala	Ile	Val	Gly	Asp	Leu	Leu	Thr	Thr
	290					295					300				
Leu	Gly	Ser	Lys	Val	Ser	Asp	Asp	Lys	Glu	Met	Ile	Leu	Ser	Glu	Gly
305					310					315					320
Tyr	His	Phe	Ala	Asp	Ser	Gln	Phe	Asp	Arg	Glu	His	Leu	Trp	His	Pro
				325					330					335	
Tyr	Thr	Ser	Thr	Ser	Asn	Pro	Leu	Pro	Val	Tyr	Lys	Val	Lys	Arg	Ala
			340					345					350		
Asp	Gly	Ala	Thr	Ile	Thr	Leu	Glu	Ser	Gly	Gln	Thr	Leu	Ile	Glu	Gly
		355					360					365			
Met	Ser	Ser	Trp	Trp	Cys	Ala	Val	His	Gly	Tyr	Asn	His	Pro	Ile	Leu
		370				375					380				
Asn	Gln	Ala	Val	Gln	Asp	Gln	Leu	Ser	Arg	Met	Ser	His	Val	Met	Phe
385					390					395					400
Gly	Gly	Leu	Thr	His	Asp	Pro	Ala	Ile	Glu	Leu	Gly	Lys	Leu	Leu	Leu

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				405					410				415		
Pro	Leu	Val	Pro	Pro	Ser	Met	Gln	Lys	Ile	Phe	Tyr	Ala	Asp	Ser	Gly
			420					425					430		
Ser	Val	Ala	Val	Glu	Val	Ala	Leu	Lys	Met	Ala	Val	Gln	Tyr	Trp	Tyr
		435					440					445			
Ala	Ala	Gly	Lys	Pro	Glu	Lys	Asn	Asn	Phe	Val	Thr	Ile	Arg	Asn	Gly
	450					455					460				
Tyr	His	Gly	Asp	Thr	Trp	Asn	Ala	Met	Ser	Val	Cys	Asp	Pro	Val	Thr
465					470					475					480
Gly	Met	His	Ser	Ile	Phe	Gly	Ser	Ala	Leu	Pro	Ile	Arg	His	Phe	Leu
			485						490					495	
Pro	Ala	Pro	Ser	Ser	Arg	Phe	Gly	Asp	Glu	Trp	Asn	Pro	Glu	Asp	Ile
		500						505				510			
Arg	Pro	Leu	Glu	His	Leu	Leu	Glu	Lys	His	Thr	Asp	Glu	Leu	Ala	Ala
	515						520					525			
Phe	Ile	Leu	Glu	Pro	Ile	Val	Gln	Gly	Ala	Gly	Gly	Met	Arg	Phe	Tyr
	530					535					540				
His	Pro	Glu	Tyr	Leu	Arg	Glu	Ala	Ala	Arg	Leu	Cys	His	Arg	Tyr	Gly
545					550					555					560
Val	Leu	Leu	Ile	Phe	Asp	Glu	Ile	Ala	Thr	Gly	Phe	Gly	Arg	Thr	Gly
			565						570					575	
Lys	Leu	Phe	Ala	Trp	Glu	His	Ala	Gly	Val	Glu	Pro	Asp	Ile	Met	Cys
		580						585				590			
Ile	Gly	Lys	Ala	Leu	Thr	Gly	Gly	Tyr	Met	Thr	Leu	Ser	Ala	Val	Leu
	595						600					605			
Thr	Thr	Asn	Glu	Val	Ala	Asp	Cys	Ile	Ser	Asn	His	Ala	Pro	Gly	Ala
	610					615					620				
Phe	Met	His	Gly	Pro	Thr	Phe	Met	Gly	Asn	Pro	Leu	Ala	Cys	Ala	Val
625					630					635					640
Ala	Cys	Ala	Ser	Val	Arg	Leu	Leu	Leu	Thr	Ser	Gly	Trp	Gln	Glu	Asn
			645						650					655	
Val	Lys	Arg	Ile	Glu	Ala	Gln	Leu	Asn	Arg	Glu	Leu	Ala	Pro	Ala	Arg
		660					665					670			
Glu	Leu	Pro	Gln	Val	Ala	Asp	Val	Arg	Val	Leu	Gly	Ala	Ile	Gly	Val
	675					680					685				
Ile	Glu	Met	Lys	Glu	Pro	Val	Asn	Met	Ala	Tyr	Leu	Gln	Arg	Arg	Phe
	690				695					700					
Val	Glu	Glu	Gly	Ile	Trp	Leu	Arg	Pro	Phe	Gly	Lys	Leu	Ile	Tyr	Val
705					710					715					720
Met	Pro	Pro	Phe	Ile	Thr	Pro	Glu	Gln	Leu	Thr	Lys	Leu	Thr	Glu	
			725					730					735		
Gly	Met	Ile	Arg	Ile	Ile	Ser	Asn	Gly	Leu	Pro	Gly	Ser	Gln	Thr	Lys
		740						745					750		

<210> 9599

<211> 489

<212> PRT

<213> B.fragilis

<400> 9599

Lys	Thr	Lys	Pro	Thr	Val	Thr	Met	Lys	Arg	Lys	Ile	Ile	Tyr	Phe	Leu
1			5					10						15	
Leu	Ala	Leu	Ala	Val	Val	Met	Pro	Ala	Ser	Ala	Gln	Lys	Phe	Phe	Lys
		20					25					30			
Asp	Ala	Ile	Ser	Leu	Ser	Asp	Val	Ser	Leu	Trp	Gln	Gln	Gly	Asn	Ser
	35					40					45				
Leu	Tyr	Val	Asp	Met	Lys	Ile	Asp	Met	Lys	Asn	Leu	Thr	Val	Ser	Pro
	50				55				60						
Glu	Arg	Met	Leu	Thr	Leu	Thr	Pro	Leu	Leu	Thr	Asp	Gly	Gln	His	Asn

65	70	75	80
Val Ala Leu Glu Glu Ile Ile Ile Asn Gly Lys Arg Arg Gln Lys Ala			
	85	90	95
Tyr Leu Arg Gly Leu Ala Ile Ser Arg Glu Leu Pro Ala Gly Ile Val			
	100	105	110
Ile Pro Tyr Asn Lys Arg Glu Val Leu Asn Tyr Ala Gln Val Ile Pro			
	115	120	125
Tyr Glu Pro Trp Met Ala Asn Ala Ser Leu Asn Leu Val Glu Asn Leu			
	130	135	140
Cys Gly Cys Gly Asn Asn Glu Glu Met Leu Ala Gln Glu Leu Ile Thr			
	145	150	155
Asn Asp Val Ser Thr Glu Ala Lys Arg Leu Ser Ala Met Ile Pro Val			
	165	170	175
Val Ala Tyr Ile Gln Pro Thr Val Glu Val Val Lys Asn Arg Ser Glu			
	180	185	190
Gln Tyr Glu Ala His Leu Asp Phe Pro Val Ser Lys Ala Val Ile Gln			
	195	200	205
Pro Glu Phe Met Asn Asn His Lys Glu Leu Met Asn Ile His Ala Met			
	210	215	220
Phe Asp Lys Ile Gln Asn Asp Lys Asn Leu Thr Val Thr Gly Ile Ser			
	225	230	235
Ile Glu Gly Phe Ala Ser Pro Glu Gly Pro Leu Lys Phe Asn Glu Gln			
	245	250	255
Leu Ser Gln Lys Arg Ala Glu Ala Leu Lys Asn Tyr Leu Thr Thr Asn			
	260	265	270
Glu Lys Val Pro Gly Lys Leu Tyr Lys Val Thr Phe Gly Gly Glu Asn			
	275	280	285
Trp Asp Gly Leu Val Gln Ala Leu Glu Lys Ser Ser Met Lys Asp Lys			
	290	295	300
Asp Lys Phe Ile Gly Ile Ile Lys Asn Thr Thr Asp Asp Ala Arg Arg			
	305	310	315
Lys Gln Glu Ile Met Arg Val Asp Gly Gly Ala Pro Tyr Arg Thr Met			
	325	330	335
Leu Lys Glu Ile Tyr Pro Gly Leu Arg Lys Val Asn Cys Lys Ile Asp			
	340	345	350
Tyr Thr Val Ala Asn Phe Asp Val Glu Gln Gly Arg Val Val Ile Lys			
	355	360	365
Val Asn Pro Lys Tyr Leu Ser Leu Asn Glu Met Tyr Gln Val Ala Asn			
	370	375	380
Ser Tyr Pro Lys Gly Ser Asn Asp Phe Val Asn Val Phe Asp Ile Ala			
	385	390	395
Val Arg Met Tyr Pro Asn Asp Glu Val Ala Asn Leu Asn Ala Ala Ala			
	405	410	415
Val Ser Leu Thr Lys Lys Asp Leu Glu Asn Ala Ile Lys Tyr Met Asp			
	420	425	430
Lys Ala Asn His Gln Thr Ala Glu Phe Ile Asn Asn Val Gly Val Tyr			
	435	440	445
Asn Phe Leu Asn Gly Asp Val Gln Arg Ala Ile Ala Ala Phe Asn Gln			
	450	455	460
Ala Ala Gln Met Gly Asn Glu Ala Ala Lys Ala Asn Leu Gln Gln Leu			
	465	470	475
Gln Gln Ile Leu Asn Met Lys Lys Lys			
	485		

<210> 9600

<211> 190

<212> PRT

<213> B.fragilis

<400> 9600

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Ile Thr Val Pro Ala Ile Pro Arg Thr Leu Ser Gly Lys Cys Leu Phe
1          5          10          15
Pro Tyr Arg Pro Pro Asn Trp Lys Thr Asn Leu Gly Arg Arg Ser Lys
          20          25          30
Cys Arg Leu Val Lys Asn Arg Leu Pro Lys Cys Leu Thr Arg Thr Lys
          35          40          45
Ser Met Asp Tyr Ser Cys Lys Gly Gln Phe Gly Asn Gly Leu Tyr Ser
          50          55          60
Lys Leu Trp Gln Val Tyr Ser Arg Arg Val Leu Arg Gln Gly Arg Lys
65          70          75          80
Pro Phe Val Tyr Glu Thr Ser Gln Gly Leu Arg Gly Ile Asp Ala Ala
          85          90          95
Gln Ala Met Thr Pro Asn Tyr Val Thr Trp Gly Gly Trp Thr Leu Arg
          100         105         110
Gln Asn Tyr Leu Asp His Ile Asn Asn Ser Met Lys Leu His Gln Gln
          115         120         125
Gln Cys Ile Tyr Ser Leu Glu Ser Asp Ala Gln Pro Gly Val Val Ser
          130         135         140
Val Ala Ile Thr Asp Ala Ile Asp Leu Gln Lys Thr Tyr Val His Tyr
145         150         155         160
Asn Cys Gly Ile Arg Tyr Gly His Asp Ser Ala Arg Thr Asp Leu Lys
          165         170         175
Met Ser Lys Met Val Trp Ile Asp Phe Arg Gln Trp Asp Asn
          180         185         190

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<210> 9601

<211> 140

<212> PRT

<213> B.fragilis

<400> 9601

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Leu Ile Tyr Thr Leu Trp Thr Phe Trp His Ala Leu Cys Phe Leu Phe
1          5          10          15
Ser Ile Lys Val Val Leu Ile Ile His Thr Lys Lys Ile Thr Ile Met
          20          25          30
Lys Lys Val Leu Val Ala Leu Ala Met Ile Met Gly Leu Gly Thr Ser
          35          40          45
Val Ala Phe Ala Ser Val Ser Gly Asp Thr Leu Ala Val Glu Gln Thr
          50          55          60
Leu Gln Thr Pro Gln Asp Glu Phe Thr Gln Ile Ala Ala Lys Glu Leu
65          70          75          80
Pro Ala Ala Val Ile Asn Ala Leu Ala Lys Asp Tyr Glu Gly Ala Ser
          85          90          95
Ile Lys Glu Ala Phe Val Ser Glu Arg Glu Thr Gly Lys Val Tyr Lys
          100         105         110
Val Ile Val Thr Val Ile Lys Glu Asp Gln Ser Thr Glu Asp Val Thr
          115         120         125
Val Leu Leu Asn Glu Lys Gly Glu Ile Val Lys Glu
          130         135         140

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<210> 9602

<211> 454

<212> PRT

<213> B.fragilis

<400> 9602

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Lys Lys Tyr Thr Ile Met Arg Tyr Asp Ile Ala Ile Ile Gly Gly Gly
1          5          10          15

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Pro	Ala	Gly	Tyr	Thr	Ala	Ala	Glu	Arg	Ala	Gly	Ala	Asn	Gly	Leu	Arg
			20					25					30		
Ala	Val	Leu	Phe	Glu	Lys	Lys	Ala	Met	Gly	Gly	Val	Cys	Leu	Asn	Glu
		35					40					45			
Gly	Cys	Ile	Pro	Thr	Lys	Ala	Leu	Leu	Tyr	Ser	Ala	Lys	Val	Leu	Asp
	50				55					60					
Gly	Ile	Lys	Ser	Ala	Pro	Lys	Tyr	Gly	Val	Ser	Val	Glu	Gly	Ala	Pro
65					70					75					80
Ala	Phe	Asp	Met	Glu	Lys	Ile	Ile	Gly	Arg	Lys	Asn	Lys	Thr	Val	Gln
			85					90						95	
Lys	Leu	Thr	Gly	Gly	Val	Arg	Met	Thr	Val	Asn	Ser	Tyr	Gly	Val	Thr
			100					105					110		
Ile	Val	Asp	Lys	Glu	Ala	Val	Ile	Glu	Gly	Glu	Gly	Glu	Glu	Gly	Phe
		115					120					125			
His	Ile	Arg	Cys	Asp	Gly	Glu	Val	Tyr	Glu	Ala	Thr	Tyr	Leu	Leu	Val
	130				135						140				
Cys	Thr	Gly	Ser	Asp	Thr	Val	Ile	Pro	Pro	Ile	Lys	Gly	Leu	Ser	Asp
145					150					155					160
Val	Asp	Tyr	Trp	Thr	Ser	Arg	Glu	Ala	Leu	Asp	Ser	Thr	Val	Leu	Pro
			165					170						175	
Ser	Ser	Leu	Ala	Ile	Ile	Gly	Gly	Gly	Val	Ile	Gly	Met	Glu	Phe	Ala
			180					185					190		
Ser	Phe	Phe	Asn	Ser	Met	Gly	Val	Arg	Val	Lys	Val	Ile	Glu	Met	Met
	195						200					205			
Pro	Glu	Ile	Leu	Gly	Ala	Met	Asp	Lys	Glu	Thr	Ser	Ala	Met	Leu	Arg
	210					215					220				
Ala	Asp	Tyr	Thr	Lys	Lys	Gly	Val	Asn	Phe	Tyr	Leu	Asn	Thr	Lys	Val
225					230					235					240
Thr	Glu	Val	Ser	Asp	Lys	Gly	Val	Thr	Val	Glu	Lys	Asp	Gly	Lys	Ser
			245					250						255	
Ser	Phe	Ile	Asp	Ala	Asp	Arg	Ile	Leu	Val	Ser	Val	Gly	Arg	Lys	Ala
			260					265					270		
Asn	Ile	Thr	Gln	Val	Gly	Leu	Asp	Lys	Leu	Asn	Ile	Glu	Leu	His	Arg
		275					280					285			
Asn	Gly	Val	Val	Val	Asp	Glu	His	Met	Leu	Thr	Ser	His	Pro	Arg	Val
	290					295					300				
Tyr	Ala	Cys	Gly	Asp	Ile	Thr	Gly	Phe	Ser	Leu	Leu	Ala	His	Thr	Ala
305					310					315					320
Ile	Arg	Glu	Ala	Glu	Val	Ala	Ile	Asn	His	Ile	Leu	Gly	Ile	Asp	Asp
			325					330						335	
Arg	Met	Asp	Tyr	Asp	Cys	Val	Pro	Gly	Val	Val	Tyr	Thr	Asn	Pro	Glu
			340					345					350		
Leu	Ala	Gly	Val	Gly	Lys	Thr	Glu	Glu	Glu	Leu	Ile	Ala	Lys	Gly	Ile
		355					360					365			
Tyr	Tyr	Arg	Ile	Gln	Lys	Leu	Pro	Met	Val	Tyr	Ser	Gly	Arg	Phe	Val
	370					375					380				
Ala	Glu	Asn	Glu	Leu	Gly	Asn	Gly	Leu	Cys	Lys	Leu	Ile	Ile	Asp	His
385					390					395					400
Asn	Asp	Arg	Ile	Val	Gly	Cys	His	Met	Leu	Gly	Asn	Pro	Ala	Ser	Glu
			405					410						415	
Ile	Ile	Val	Val	Ala	Gly	Ile	Ala	Ile	Gln	Arg	Gly	Tyr	Thr	Val	Asp
		420					425						430		
Glu	Phe	Arg	Lys	Ser	Val	Phe	Pro	His	Pro	Thr	Val	Gly	Glu	Ile	Tyr
	435						440					445			
His	Glu	Thr	Leu	Phe	Ala										
	450														

<210> 9603

<211> 140

<212> PRT
 <213> B.fragilis

<400> 9603

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Pro Asp Ile Thr Ile Arg Leu Met Lys Lys Glu Arg Tyr Ile Ser His
1          5          10          15
Ser Phe Ile Arg Phe Arg Gln Trp Ser Arg Lys Ala Tyr Ala Ile Phe
          20          25          30
Ala Thr Leu Gly Leu Cys Val Thr Ile Gly Gln Leu Arg Lys Asn Ile
          35          40          45
Thr Glu Cys Ala Leu Cys Lys Gln Gln Thr Pro His Thr Thr Gly Leu
          50          55          60
Asp Pro Gln Arg Glu Thr Glu Asp Ser Val Pro Glu Glu Asp Trp Glu
65          70          75          80
Asn Leu Thr Leu Ser Pro Glu Pro Leu Leu Leu Leu Thr Gln Leu
          85          90          95
Gln Ser Ser Lys Tyr Ser Tyr Ala Gly Ala Ala Gln Ser Thr Val Val
          100          105          110
Thr Ser Ala Ser His Ile Thr Pro Lys Glu Val Ala Ser His Pro Asp
          115          120          125
Gly Thr Gly Asn Leu Phe Phe Asn Ile Pro Thr Leu
          130          135          140

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<210> 9604

<211> 60
 <212> PRT
 <213> B.fragilis

<400> 9604

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Pro Gly Arg Thr Gly Ser Glu Asn Ala Leu Gly Arg Arg Asn Pro Asp
1          5          10          15
Ala Thr Thr Gln Arg Leu Lys Phe Thr Thr Lys Gly Thr Glu Gly Val
          20          25          30
Ile Val His His Cys Val His Gly Leu Ala Arg Tyr Ile Phe Asn Leu
          35          40          45
Leu Ile Ala Tyr Asp Ile Tyr Leu Tyr Asn Leu Trp
          50          55          60

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<210> 9605

<211> 129
 <212> PRT
 <213> B.fragilis

<400> 9605

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Thr Phe Gly Thr Asp Ala Val Pro Asp Thr Ser Ala Ala Phe Gly Ala
1          5          10          15
Asp Ala Val Ser Thr Glu Pro Ala Val Ser Asp Ala Ser Pro Glu Pro
          20          25          30
Ser Pro Ser Ile Ser Thr Met Ala Thr Thr Val Pro Thr Gly Thr Val
          35          40          45
Ser Pro Ser Leu Asn Asn Ile Ser Thr Thr Phe Pro Ala Thr Gly Glu
          50          55          60
Gly Ile Ser Ala Leu Thr Leu Ala Val Phe Thr Ser Lys Ser Thr Ser
65          70          75          80
Ser Ser Leu Thr Thr Ser Pro Thr Cys Thr Asp His Asp Lys Met Val
          85          90          95
Pro Ser Val Ile Leu Ser Pro Asn Leu Gly Ile Phe Ile Ser Asn Leu
          100          105          110
Ala Ile Tyr Thr Ile Ile Tyr Ser Phe Thr Cys Thr Ser Arg Thr Arg

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 Leu

 <210> 9606
 <211> 1043
 <212> PRT
 <213> B.fragilis

 <400> 9606
 Gly Met Lys Thr Asn Leu Arg Leu Leu Phe Thr Leu Leu Phe Val Val
 1 5 10 15
 Ser Val Val Ala Leu Arg Ala Gly Thr Met Asn Asp Ile Arg Val Ser
 20 25 30
 Gly Thr Val Val Ser Glu Gly Asp Pro Leu Pro Gly Val Ser Val Leu
 35 40 45
 Val Lys Gly Thr Gly Val Gly Thr Ile Thr Gly Ile Asp Gly Lys Tyr
 50 55 60
 Ser Ile Asn Val Pro Ser Asp Gly Thr Leu Val Phe Ser Phe Ile Gly
 65 70 75 80
 Leu Lys Ser Val Glu His Lys Val Gly Gly Arg Ser Val Ile Asn Val
 85 90 95
 Glu Leu Val Pro Asp Ser Lys Gln Leu Glu Glu Val Met Val Val Ala
 100 105 110
 Tyr Ala Thr Ala Lys Lys Tyr Ser Phe Thr Gly Ala Ala Ser Thr Val
 115 120 125
 Lys Gly Asp Glu Ile Ala Lys Leu Gln Thr Ser Ser Val Ser Arg Ala
 130 135 140
 Leu Glu Gly Thr Val Ala Gly Leu Gln Ala Ser Ala Ala Ser Gly Gln
 145 150 155 160
 Pro Gly Thr Asp Ala Thr Ile Arg Ile Arg Gly Ile Gly Ser Ile Asn
 165 170 175
 Ala Ser Ser Ala Pro Leu Tyr Val Val Asp Gly Val Pro Tyr Asp Gly
 180 185 190
 Ser Val Asn Ser Ile Asn Pro Glu Asp Ile Ala Ser Met Thr Val Leu
 195 200 205
 Lys Asp Ala Ala Ser Ala Ala Leu Tyr Gly Ser Arg Gly Ala Asn Gly
 210 215 220
 Val Ile Ile Ile Thr Thr Lys Gln Gly Gln Ser Asp Ser Lys Thr Thr
 225 230 235 240
 Val Asn Val Lys Ala Ser Phe Gly Gly Ser Asn Arg Ala Val Arg Asp
 245 250 255
 Tyr Asp Arg Ile Gly Thr Asp Gln Tyr Phe Glu Leu Tyr Trp Glu Ala
 260 265 270
 Leu Arg Asn Gln Tyr Ala Leu Asp Thr Lys Asn Tyr Thr Pro Gln Thr
 275 280 285
 Ala Ala Ile Lys Ala Ser Lys Asp Leu Val Gly Lys Leu Met Gly Ala
 290 295 300
 Gly Pro Asn Pro Tyr Gly Ser Lys Tyr Pro Gln Pro Val Gly Thr Asp
 305 310 315 320
 Gly Lys Leu Ala Asp Gly Ala Val Pro Leu Trp Asn Phe Asp Trp Gln
 325 330 335
 Asp Ala Met Glu Gln Gln Ala Leu Arg Thr Glu Leu Gly Leu Asn Val
 340 345 350
 Ser Gly Gly Gly Lys Thr Asn Gln Tyr Tyr Phe Ser Ala Gly Tyr Leu
 355 360 365
 Asn Asp Lys Gly Ile Ala Leu Glu Ser Gly Tyr Glu Arg Phe Asn Leu
 370 375 380
 Arg Ser Asn Val Thr Ser Gln Met Thr Lys Trp Leu Arg Gly Gly Val

385	Asn	Met	Ser	Phe	Ala	His	Ser	Leu	Gln	Asn	Tyr	Pro	Val	Ser	Ser	Asp
				405						410						415
Thr	Lys	Thr	Ser	Asn	Val	Ile	Asn	Ala	Gly	Arg	Leu	Met	Asn	Gly	Phe	
			420					425						430		
Tyr	Pro	Ile	Tyr	Gln	Met	Asn	Glu	Asp	Gly	Thr	Tyr	Lys	Leu	Asp	Ser	
		435					440					445				
Glu	Gly	Gln	Arg	Ile	Tyr	Asp	Phe	Gly	Ser	Tyr	Arg	Pro	Ser	Gly	Ser	
	450					455					460					
Met	Ala	Asn	Trp	Asn	Leu	Pro	Ala	Thr	Leu	Pro	Asn	Asp	Lys	Ser	Glu	
465					470					475					480	
Arg	Met	Lys	Asp	Glu	Phe	Ser	Gly	Arg	Thr	Phe	Leu	Glu	Val	Thr	Phe	
			485					490						495		
Ile	Glu	Gly	Leu	Lys	Phe	Lys	Thr	Ser	Phe	Asn	Phe	Asp	Leu	Ile	Asn	
			500					505					510			
Tyr	Asn	Ser	Leu	Asp	Tyr	Thr	Asn	Pro	Lys	Ile	Gly	Pro	Ala	Val	Asn	
	515						520					525				
Thr	Gly	Gly	Ser	Ser	Ser	Arg	Glu	Asn	Asp	Arg	Thr	Phe	Ser	Trp	Thr	
	530					535					540					
Trp	Asn	Asn	Ile	Leu	Thr	Tyr	Asp	Lys	Thr	Leu	Gly	Glu	His	His	Phe	
545					550					555					560	
Asn	Leu	Leu	Ala	Gly	Gln	Glu	Ala	Tyr	Ser	Tyr	Arg	Tyr	Asp	Val	Leu	
			565					570						575		
Arg	Ala	Ser	Arg	Ser	Asn	Met	Ala	Leu	Pro	Asp	Phe	Pro	Glu	Leu	Ala	
			580					585					590			
Val	Gly	Ser	Leu	Val	Thr	Gly	Gly	Thr	Gly	Tyr	Arg	Val	Asp	Tyr	Ser	
		595					600					605				
Leu	Val	Gly	Tyr	Phe	Leu	Asn	Ala	Gln	Tyr	Asp	Tyr	Gln	Ser	Lys	Tyr	
	610					615					620					
Phe	Phe	Ser	Gly	Ser	Tyr	Arg	Arg	Asp	Gly	Ser	Ser	Arg	Phe	Ala	Pro	
625					630				635						640	
Glu	Thr	Arg	Trp	Gly	Asn	Phe	Trp	Ser	Val	Gly	Ala	Ser	Trp	Arg	Ile	
			645					650						655		
Asp	Arg	Glu	Asp	Phe	Met	Val	Ala	Ala	Ser	Asp	Trp	Leu	Ser	Ala	Leu	
		660						665					670			
Thr	Leu	Lys	Val	Ser	Tyr	Gly	Ala	Gln	Gly	Asn	Asp	Asn	Leu	Gly	Thr	
	675						680				685					
Tyr	Tyr	Ala	Ser	Ser	Gly	Leu	Tyr	Ser	Val	Val	Ser	Asn	Asn	Gly	Glu	
	690					695					700					
Asn	Ala	Leu	Val	Ser	Asp	Arg	Leu	Ala	Thr	Pro	Lys	Leu	Lys	Trp	Glu	
705					710					715					720	
Thr	Asn	Leu	Asn	Phe	Asn	Ala	Gly	Ile	Asp	Phe	Ser	Leu	Phe	Asn	Asn	
			725					730						735		
Arg	Phe	Ser	Gly	Ser	Phe	Asp	Phe	Phe	Gln	Arg	Arg	Ser	Lys	Asp	Leu	
		740					745						750			
Leu	Tyr	Ser	Arg	Pro	Leu	Ala	Pro	Ser	Leu	Gly	Tyr	Asn	Ser	Val	Asp	
	755					760					765					
Glu	Asn	Val	Gly	Glu	Leu	Lys	Asn	Thr	Gly	Val	Glu	Ile	Asp	Leu	Lys	
	770					775					780					
Gly	Thr	Leu	Ile	His	Thr	Arg	Asp	Phe	Met	Trp	Arg	Leu	Gly	Leu	Asn	
785					790				795						800	
Leu	Thr	His	Tyr	Lys	Asn	Val	Val	Thr	Asp	Leu	Pro	Leu	Lys	Asp	Met	
			805					810						815		
Pro	Val	Ser	Gly	Val	His	Lys	Leu	Ala	Val	Gly	Arg	Ser	Val	Tyr	Asp	
		820					825						830			
Phe	Tyr	Met	Lys	Gln	Trp	Ala	Gly	Val	Asp	Pro	Glu	Asn	Gly	Asp	Pro	
	835					840					845					
Leu	Trp	Tyr	Lys	Asn	Val	Lys	Asp	Ala	Asn	Asp	Lys	Ile	Thr	Gly	Arg	
	850					855					860					

Thr Thr Thr Asn Asp Tyr Ala Gln Ala Asp Tyr Tyr Tyr Thr Gly Lys
 865 870 875 880
 Ser Ser Leu Pro Lys Val Tyr Gly Gly Phe Asn Thr Ala Phe Ser Tyr
 885 890 895
 Lys Gly Phe Glu Leu Ser Thr Ile Phe Ala Tyr Ser Ile Gly Asn Tyr
 900 905 910
 Ile Val Asp Arg Asp Val Thr Met Leu Trp His Asn Gly Ser Ser Thr
 915 920 925
 Gly Arg Ala Trp Ser Thr Glu Ile Leu Asn Arg Trp Thr Pro Glu Asn
 930 935 940
 Arg Tyr Thr Asp Val Pro Ala Leu Lys Thr Val Ser Asn Ser Trp Asn
 945 950 955 960
 Ala Asn Ser Thr Arg Asn Leu Phe Asn Asn Ser Phe Leu Arg Met Lys
 965 970 975
 Asn Ile Thr Leu Ser Tyr Asn Phe Pro Gln Pro Met Ile Lys Lys Ile
 980 985 990
 Ser Leu Asn Ser Leu Gln Leu Phe Val Gln Ala Asp Asn Leu Leu Thr
 995 1000 1005
 Val Ser Lys Asn Gln Gly Leu Asp Pro Glu Gln Asp Ile Ser Gly Leu
 1010 1015 1020
 Thr Tyr Tyr Arg Tyr Pro Ala Met Arg Ser Ile Ser Gly Gly Ile Asn
 1025 1030 1035 1040
 Val Ser Phe

<210> 9607
 <211> 200
 <212> PRT
 <213> B.fragilis

<400> 9607
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Pro Phe His Gln Ala Asp Thr His
 195 200

<210> 9608

<211> 74
 <212> PRT
 <213> B.fragilis

<400> 9608

Arg	Ile	His	Phe	Ser	Asn	Met	Lys	Lys	Leu	Leu	Cys	Pro	Gln	Cys	Lys
1				5					10					15	
Ile	Ala	Gly	Met	Tyr	Val	Lys	Asn	Asp	Gln	Gly	Glu	Arg	Leu	Leu	Val
			20					25					30		
Tyr	Ile	Ala	Gln	Asp	Gly	Thr	Val	Val	Pro	Lys	Tyr	Pro	Glu	Ile	Pro
		35				40						45			
Ile	Glu	Gly	Phe	Asp	Phe	Thr	Glu	Val	Tyr	Cys	Leu	Gly	Cys	Ser	Trp
	50					55					60				
His	Gly	Ser	Pro	Lys	Gln	Leu	Thr	Arg	Phe						
65						70									

<210> 9609
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 9609

Lys	Arg	Asn	Leu	Lys	Phe	Asp	Pro	Val	Ile	Pro	Gln	Ser	Ser	Thr	Gly
1				5					10					15	
Leu	Thr	Val	Met	Ser	Phe	Val	Cys	Tyr	Ser	Met	Ala	Gly	Leu	Cys	Val
			20					25					30		
Leu	Lys	Tyr	Glu	Leu	Tyr	Cys	Cys	Pro	Ser	Val	Phe	Leu	Leu	Met	Val
		35				40						45			
Tyr	Glu	Gly	Glu	Ser	Val	Leu	Phe	Cys	Phe	Pro	Ala	Asp	Ser	Arg	Asn
	50					55					60				
Ile	Ile	Asp	Ile	Glu	Ser	Ala	His	Lys							
65						70									

<210> 9610
 <211> 522
 <212> PRT
 <213> B.fragilis

<400> 9610

Ser	Asp	Arg	Tyr	Asn	Ser	Thr	Ile	Tyr	Asn	Ser	Val	Gln	Tyr	Leu	Asp
1				5					10					15	
Ala	Thr	Val	Tyr	Arg	Tyr	Trp	Thr	Leu	Asp	Asp	Cys	Phe	Pro	Leu	Glu
		20						25					30		
Tyr	Phe	Leu	Ile	Leu	Leu	Arg	His	Lys	Phe	Ser	Ile	Arg	Lys	Arg	Leu
		35				40						45			
Asn	Ile	Gly	His	Ser	Leu	Ala	Gly	Ser	Tyr	Lys	Asn	Lys	Tyr	Leu	Tyr
	50					55					60				
His	Glu	Leu	Lys	Lys	Gly	Ser	Glu	Ser	Lys	Gly	Asp	Ala	Met	Asn	Thr
65					70					75				80	
Gly	Thr	Ile	Leu	Ile	Val	Asp	Asp	Asn	Lys	Gly	Val	Leu	Ala	Ser	Leu
			85						90					95	
Glu	Leu	Leu	Leu	Glu	Asn	Tyr	Phe	Ser	Lys	Ile	Leu	Thr	Ala	Ser	Asn
		100						105					110		
Pro	Asn	Gln	Ile	Thr	Ala	Leu	Leu	Thr	Thr	Arg	Arg	Ile	Asp	Val	Val
		115					120					125			
Ile	Leu	Asp	Met	Asn	Phe	Ser	Ala	Gly	Ile	Asn	Asn	Gly	Asn	Glu	Gly
	130					135					140				
Leu	Tyr	Trp	Leu	Gly	His	Ile	Arg	Gln	Met	Ala	Pro	Thr	Leu	Pro	Val
145					150					155					160

Val Met Leu Thr Ala Tyr Gly Asp Val Glu Leu Ala Val Lys Ala Leu
 165 170 175
 Lys Asn Gly Ala Ala Asp Phe Leu Leu Lys Pro Trp Asp Asn Gln Thr
 180 185 190
 Leu Ile Asp Lys Val Thr Glu Ala Tyr His Ser Arg Lys Ala Pro Glu
 195 200 205
 Arg Thr Ala Lys Val Asp Arg Ala Glu Gly Phe Glu Met Leu Val Gly
 210 215 220
 Arg Ser Pro Ala Met Leu Gln Leu Met Lys Val Val Ser Lys Val Ala
 225 230 235 240
 Arg Thr Asp Ala Asn Ile Leu Ile Thr Gly Glu Asn Gly Thr Gly Lys
 245 250 255
 Glu Ile Leu Ala Arg Glu Ile His Arg Leu Ser Pro Arg Gly Ala Arg
 260 265 270
 Pro Met Leu Asn Val Asp Met Gly Ala Ile Ser Glu Ser Leu Phe Glu
 275 280 285
 Ser Glu Leu Phe Gly His Glu Arg Gly Ala Phe Thr Asp Ala His Glu
 290 295 300
 Ser Arg Pro Gly Lys Phe Glu Ala Ala Asn Gly Ser Ser Leu Phe Met
 305 310 315 320
 Asp Glu Leu Gly Asn Leu Pro Leu Pro Leu Gln Thr Lys Leu Leu Thr
 325 330 335
 Val Leu Gln Ser Arg Asn Val Thr Arg Leu Gly Ser Asn Lys Val Ile
 340 345 350
 Pro Val Asp Ile Arg Leu Ile Ser Ala Thr Asn Lys Asp Ile Pro Glu
 355 360 365
 Met Val Lys Gln Gly Met Phe Arg Glu Asp Leu Phe Tyr Arg Ile Asn
 370 375 380
 Thr Ile His Leu Glu Leu Pro Pro Leu Arg Glu Arg Gly Asp Asp Ile
 385 390 395 400
 Leu Leu Phe Ile Asp Cys Phe Leu Arg Lys Phe Thr Ser Lys Tyr Gln
 405 410 415
 Arg Gln Glu Ile Arg Ile His Glu Gln Thr Val Glu Lys Leu Arg Ser
 420 425 430
 Tyr His Trp Pro Gly Asn Ile Arg Glu Leu Gln His Thr Ile Glu Lys
 435 440 445
 Ala Val Ile Leu Cys Glu Gly Ser Val Ile Arg Pro Lys Asp Ile Leu
 450 455 460
 Val Lys Gln Thr Trp Gln Pro Gln Ala Thr Ala Thr Val Pro Asn Leu
 465 470 475 480
 Glu Glu Val Glu Arg Arg Ala Ile Glu Thr Ala Ile Leu Gln Asn Asn
 485 490 495
 Gly Asn Leu Thr Ala Ala Ala Glu Gln Leu Gly Val Ser Arg Gln Thr
 500 505 510
 Leu Tyr Asn Lys Leu Lys Arg Phe Lys Leu
 515 520

<210> 9611

<211> 459

<212> PRT

<213> B.fragilis

<400> 9611

Ile Ile Val Tyr Met Ala Arg Phe Glu Ile Lys Met Pro Lys Leu Gly
 1 5 10 15
 Glu Ser Ile Thr Glu Gly Thr Ile Leu Ser Trp Ser Val Gln Val Gly
 20 25 30
 Asp Val Val Asn Glu Asp Asp Val Leu Phe Glu Val Asn Thr Ala Lys
 35 40 45

Val	Ser	Ala	Glu	Ile	Pro	Ser	Pro	Val	Ala	Gly	Lys	Val	Val	Glu	Ile
50						55					60				
Leu	Phe	Lys	Glu	Gly	Asp	Thr	Val	Pro	Val	Gly	Thr	Val	Val	Ala	Ile
65					70					75					80
Val	Asp	Met	Asp	Gly	Glu	Gly	Ser	Gly	Glu	Ala	Ser	Glu	Thr	Ala	Gly
				85					90					95	
Ser	Val	Glu	Thr	Ala	Ser	Ala	Pro	Lys	Ala	Ala	Glu	Val	Ser	Gly	Thr
			100					105					110		
Ala	Ser	Val	Pro	Lys	Val	Gln	Ala	Glu	Val	Thr	Ala	Pro	Lys	Val	Glu
		115					120					125			
Arg	Trp	Tyr	Ser	Pro	Ala	Val	Leu	Gln	Leu	Ala	Arg	Glu	Ala	Lys	Ile
	130					135					140				
Ser	Gln	Glu	Glu	Leu	Asp	Ser	Ile	Pro	Gly	Thr	Gly	Tyr	Glu	Gly	Arg
145					150					155					160
Leu	Ser	Lys	Lys	Asp	Ile	Arg	Thr	Tyr	Ile	Glu	Met	Lys	Lys	Gly	Ala
				165					170					175	
Pro	Ala	Ala	Asp	Val	Ser	Thr	Thr	Val	Val	Ser	Thr	Val	Ser	Ala	Asn
			180					185					190		
Asn	Ser	Gly	Ser	Ser	Pro	Val	Pro	Ser	Ala	Glu	Val	Gln	Lys	Lys	Ala
	195					200						205			
Ala	Ala	Thr	Ala	Pro	Gln	Ala	Gln	His	Gly	Gln	Ser	Ala	Ser	Ala	Val
	210					215					220				
Ser	Ser	Asp	Ala	Ser	Val	Glu	Val	Lys	Glu	Met	Asp	Arg	Val	Arg	Arg
225					230					235					240
Ile	Ile	Ala	Asp	His	Met	Val	Met	Ser	Lys	Lys	Val	Ser	Pro	His	Val
				245					250					255	
Thr	Asn	Val	Val	Glu	Val	Asp	Val	Thr	Arg	Leu	Val	Arg	Trp	Arg	Glu
			260					265					270		
Lys	Thr	Lys	Asp	Asp	Phe	Phe	Arg	Arg	Glu	Gly	Val	Lys	Leu	Thr	Tyr
		275					280					285			
Met	Pro	Ala	Ile	Ala	Glu	Ala	Thr	Ala	Gln	Ala	Leu	Ala	Ala	Tyr	Pro
	290					295					300				
Gln	Val	Asn	Val	Ser	Val	Asp	Gly	Tyr	Asn	Ile	Leu	Tyr	Lys	Lys	His
305					310					315					320
Ile	Asn	Val	Gly	Ile	Ala	Val	Ser	Gln	Asp	Asp	Gly	Asn	Leu	Ile	Val
			325						330					335	
Pro	Val	Val	His	Asp	Ala	Asp	Arg	Leu	Asn	Leu	Asn	Gly	Leu	Ala	Val
			340					345					350		
Ala	Ile	Asp	Ser	Leu	Ala	Lys	Lys	Ala	Arg	Val	Asn	Lys	Leu	Met	Pro
		355					360					365			
Asp	Asp	Ile	Asp	Gly	Gly	Thr	Phe	Thr	Ile	Thr	Asn	Phe	Gly	Thr	Phe
	370					375					380				
Lys	Met	Leu	Phe	Gly	Thr	Pro	Ile	Ile	Asn	Gln	Pro	Gln	Val	Ala	Ile
385					390					395					400
Leu	Gly	Val	Gly	Val	Ile	Glu	Lys	Lys	Pro	Ala	Val	Val	Glu	Thr	Pro
			405						410					415	
Glu	Gly	Asp	Val	Ile	Ala	Ile	Arg	His	Lys	Met	Tyr	Leu	Ser	Leu	Ser
		420					425						430		
Tyr	Asp	His	Arg	Val	Val	Asp	Gly	Ser	Leu	Gly	Gly	Asn	Phe	Leu	His
	435					440						445			
Phe	Ile	Ala	Asp	Tyr	Leu	Glu	Asn	Trp	Lys	Glu					
	450					455									

<210> 9612

<211> 68

<212> PRT

<213> B.fragilis

<400> 9612

His Gly Pro Gln Gln Gln Phe Gly Asn Tyr Gly Leu Ser Phe Leu Cys
 1 5 10 15
 Asn Met Ser Phe Tyr Ser Glu Leu Phe Ala Gly Thr Pro Leu Ala Phe
 20 25 30
 Asp Arg Arg Gln Gln Asp Ile Leu Val Ser Leu Leu Leu Lys Gly Tyr
 35 40 45
 Gln Trp Ile Val Trp Arg Gly Asn Trp Asp Val Thr Gly Leu Asn Arg
 50 55 60
 Lys Leu Phe Pro
 65

<210> 9613
 <211> 289
 <212> PRT
 <213> B.fragilis

<400> 9613

Ile Val Leu Leu Gln Ile Lys Thr Pro Met Lys Tyr Phe Glu Phe Thr
 1 5 10 15
 Phe Asp Thr His Pro Cys Thr Glu Thr Val Asn Asp Val Leu Ala Ala
 20 25 30
 Val Leu Gly Glu Ala Gly Phe Glu Ser Phe Val Glu Arg Glu Gly Gly
 35 40 45
 Leu Thr Ala Tyr Ile Gln Gln Ser Leu Tyr Asn Glu Thr Leu Lys
 50 55 60
 Thr Glu Leu Ala Asn Phe Pro Val Pro Asp Thr Glu Ile Ser Tyr Thr
 65 70 75 80
 Phe Ala Glu Ala Glu Asp Lys Asp Trp Asn Glu Glu Trp Glu Lys Asn
 85 90 95
 Phe Phe Gln Pro Ile Val Ile Gly Asp Arg Cys Val Ile His Ser Thr
 100 105 110
 Phe His Gln Asp Val Pro Lys Ala Glu Tyr Asp Ile Leu Ile Asn Pro
 115 120 125
 Gln Met Ala Phe Gly Thr Gly His His Glu Thr Thr Ser Leu Ile Ile
 130 135 140
 Gly Glu Leu Leu Asp Ser Glu Leu Thr Gly Lys Ser Leu Leu Asp Met
 145 150 155 160
 Gly Cys Gly Thr Ser Ile Leu Ala Ile Leu Ala Arg Met Arg Gly Ala
 165 170 175
 Lys Pro Cys Thr Ala Ile Asp Ile Asp Glu Trp Cys Val Arg Asn Ser
 180 185 190
 Ile Glu Asn Ile Glu Leu Asn Gly Val Thr Asp Ile Ala Val Ser Gln
 195 200 205
 Gly Asp Ala Ser Ala Leu Gln Gly Lys Gly Pro Phe Asp Val Val Ile
 210 215 220
 Ala Asn Ile Asn Arg Asn Ile Leu Leu Asn Asp Met Lys Gln Tyr Val
 225 230 235 240
 Ala Cys Met His Pro Gly Ser Glu Leu Phe Met Ser Gly Phe Tyr Ile
 245 250 255
 Asp Asp Ile Pro Ala Ile Arg Arg Glu Ala Glu Lys His Gly Leu Thr
 260 265 270
 Phe Val His Gln Glu Lys Asn Arg Trp Ala Ala Val Lys Phe Val
 275 280 285
 Leu

<210> 9614
 <211> 83
 <212> PRT

<213> B.fragilis

<400> 9614

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9615

<211> 405

<212> PRT

<213> B.fragilis

<400> 9615

Ile Lys Leu Lys Asn Ile Thr Asn Met Asn Lys Asn Gln Glu Thr Glu
 1 5 10 15
 Arg Gly Glu Leu Thr Arg Phe Leu Asp Glu Leu Gln Leu Leu Lys Lys
 20 25 30
 Lys Asp Asn Phe Arg Thr Leu Pro Thr Leu Val His Gln Gly Lys Glu
 35 40 45
 Val Ile Ile Gly Gly Gln Arg Met Leu Asn Leu Ser Ser Asn Asp Tyr
 50 55 60
 Leu Gly Leu Ala Asn Asp Ser Gly Leu Leu Lys Ala Phe Trp Gln Thr
 65 70 75 80
 Val Lys Pro Glu Glu Ile Lys Phe Ser Ser Ser Ser Ser Arg Leu Leu
 85 90 95
 Thr Gly Asn Phe Ala Ala Tyr Asp Glu Leu Glu Ala Thr Leu Ser Ser
 100 105 110
 Leu Phe Gly Thr Glu Ala Ala Leu Val Phe Asn Cys Gly Tyr His Ala
 115 120 125
 Asn Thr Gly Ile Leu Pro Ala Val Cys Asp Thr Lys Thr Leu Ile Leu
 130 135 140
 Ala Asp Lys Leu Ile His Ala Ser Leu Ile Asp Gly Ile Arg Leu Ser
 145 150 155 160
 Asp Ala Lys Cys Ile Arg Tyr Arg His Asn Glu Tyr Ser Gln Leu Glu
 165 170 175
 Arg Leu Val Glu Thr Tyr His Lys Glu Tyr Glu Gln Ile Ile Ile Val
 180 185 190
 Thr Glu Ser Ile Phe Ser Met Asp Gly Asp Glu Ala Asp Leu Pro Arg
 195 200 205
 Leu Val Lys Leu Lys Arg Lys Tyr Pro Asn Val Leu Leu Tyr Leu Asp
 210 215 220
 Glu Ala His Ala Val Gly Val Arg Gly Thr Gly Gly Leu Gly Cys Ala
 225 230 235 240
 Glu Ala Tyr Gly Cys Ile Ser Asp Ile Asp Phe Leu Val Gly Thr Phe
 245 250 255
 Gly Lys Ala Leu Ala Ser Ser Gly Ala Tyr Ile Val Cys Arg Gln Val
 260 265 270
 Ile Arg Asp Tyr Leu Ile Asn Lys Met Arg Pro Phe Ile Phe Thr Thr
 275 280 285
 Ala Leu Pro Pro Val Thr Leu Gln Trp Thr Ser Phe Val Leu Arg His

290	295	300
Leu Ala Glu Tyr Gln	Glu Lys Arg Glu His	Leu Ala Ala Ile Ser Ser
305	310	315
Asn Leu Arg Thr Gly	Leu Gln Glu Lys Gly Tyr	Phe Ser Ala Ser Ala
	325	330
Ser Gln Ile Val Pro	Met Ile Ala Gly Glu	Ser Ser Ser Ala Val Arg
	340	345
Met Ala Glu Glu Leu	Gln Arg Lys Gly Phe Tyr	Ala Leu Pro Val Arg
	355	360
Pro Pro Thr Val Pro	Glu Gly Thr Ser Arg	Ile Arg Phe Ser Leu Thr
	370	375
Ala Asp Val Thr Glu	Lys Glu Val Lys Arg	Val Ile Ala Thr Ile Arg
385	390	395
Pro Val Ser Ser Lys		
	405	

<210> 9616

<211> 563

<212> PRT

<213> B.fragilis

<400> 9616

Ser Pro Glu Lys Gly	Cys Cys Asn His	Met Leu Arg Ser Gly	Leu Ile
1	5	10	15
Met His Lys Ser His	Ile Thr Asp Ile	Val Lys Tyr Lys	Ile Thr Asp
	20	25	30
Asp Met Arg Thr Ile	Arg Phe Asn Asn	Asn Arg His Ile	Ser Ser Ser
	35	40	45
Pro Leu Leu Arg Thr	Glu Gly Gly Arg	Glu Val Ser Val	Ser Asn Thr
	50	55	60
Ser Gly Asp Lys Ile	Pro Lys Gly Lys	Phe Ser Phe Leu	Leu Leu Phe
65	70	75	80
Phe Leu Leu Phe Leu	Gly Ser Cys Ser	Ser Asp Phe Leu	Asp Asn Lys
	85	90	95
Pro Thr Asp Ala Val	Asp Ser Gly Leu	Val Pro Val Pro	Ser Asn Ala
	100	105	110
Glu Arg Ile Phe Asn	Gly Ala Trp Tyr	Asn Leu Phe Glu	Tyr Gly Thr
	115	120	125
Thr Tyr Ala Asn Ile	Gly Tyr Arg Ala	Leu Met Cys Leu	Asp Asp Met
	130	135	140
Met Ala Asp Asp Val	Val Ser Arg Pro	Met Tyr Gly Phe	Asn Ser Ser
145	150	155	160
Tyr Gln Phe Asn Asp	Val Val Met Pro	Ser Asp Gly Arg	Thr Thr Phe
	165	170	175
Ala Trp Tyr Leu Met	Tyr Lys Thr Ile	Asp Asn Cys Asn	Thr Ala Ile
	180	185	190
Ser Ile Gln Ala Thr	Gly Asp Asp Asp	Thr Pro Glu Phe	Arg His Ala
	195	200	205
Gln Gly Gln Ala Leu	Ala Val Arg Ala	Phe Cys Tyr Leu	His Leu Ala
	210	215	220
Gln His Tyr Gln Phe	Thr Tyr Leu Lys	Asp Lys Asn Ala	Leu Cys Val
225	230	235	240
Pro Leu Tyr Thr Glu	Pro Thr Asn Pro	Asn Thr Lys Pro	Lys Gly Lys
	245	250	255
Ala Thr Leu Glu Ile	Tyr Thr Gln Ile	Ile Asn Asp Leu	Asn Arg
	260	265	270
Ala Lys Gly Leu Leu	Asp Gly Tyr Val	Arg Pro Asn Asp	Lys Ser Lys
	275	280	285
Tyr Lys Pro Asn Thr	Asp Val Val Asn	Gly Leu Leu Ala	Arg Thr Tyr

290 295 300
 Leu Leu Thr Gly Gln Trp Asp Glu Ala Ala Lys Ala Ala Leu Glu Ala
 305 310 315 320
 Ala Lys Gly Tyr Thr Leu Met Thr Asp Ala Lys Asn Tyr Met Gly Phe
 325 330 335
 Asn Asp Ile Ser Asn Thr Glu Trp Ile Trp Gly His Pro Gln Ser Val
 340 345 350
 Ser Gln Ser Asp Ala Ser Tyr Asn Phe Tyr Tyr Leu Asp Val Val Glu
 355 360 365
 Pro Asp Ser Tyr Asn Ser Phe Met Ala Asp Pro His Phe Lys Asp Thr
 370 375 380
 Phe Thr Glu Gly Asp Ile Arg Leu Glu Leu Phe Gln Trp Met Arg Glu
 385 390 395 400
 Gly Tyr Leu Gly Tyr Arg Lys Phe Arg Ile Arg Ser Asp Gln Thr Gly
 405 410 415
 Asp Ile Val Ile Met Arg Ser Ala Glu Met Tyr Leu Ile Ala Ala Glu
 420 425 430
 Ala Leu Ala Arg Lys Gly Gln Leu Gly Glu Ala Val Lys Pro Leu Asn
 435 440 445
 Thr Leu Arg Asn Ala Arg Gly Leu Ala Asp Tyr Asp Leu Thr Gly Lys
 450 455 460
 Asn Gln Glu Gln Val Ile Asp Glu Ile Leu Met Glu Arg Arg Arg Glu
 465 470 475 480
 Phe Trp Gly Glu Gly Phe Gly Ile Thr Asp Val Leu Arg Thr Gln Arg
 485 490 495
 Pro Val Val Arg Val Ala Leu Thr Glu Asp Glu Ala Ala Lys Glu Tyr
 500 505 510
 Asp Cys Trp Gln Gln Asn Gly Thr Tyr Lys Lys Tyr His Pro Glu Gly
 515 520 525
 His Trp Phe Thr Ser Phe Pro Asp Gly Thr Lys Phe Val Pro Asn Ser
 530 535 540
 Ile Tyr Tyr Leu Tyr Ser Ile Pro Glu Lys Glu Thr Asn Ala Asn Pro
 545 550 555 560
 Asn Leu Lys

<210> 9617

<211> 555

<212> PRT

<213> B.fragilis

<400> 9617

Thr Tyr Met Asn Met Lys Thr Leu Phe Ile Phe Leu Phe Val Leu Leu
 1 5 10 15
 Ala Phe Tyr Ser Cys Asp Thr Asp Glu Pro Ile Ser Ala Glu Asp Leu
 20 25 30
 Ser Ala Ala Thr Gly Thr Asn Thr Asp Glu Val Asp Val Ala Ser Arg
 35 40 45
 Ser Gly Ser Tyr Leu Ile Trp Leu Asn Gly Met Ser Ala Glu Thr Lys
 50 55 60
 Lys Val Ala Asp Gln Leu Gln Thr Val Asn His Tyr Asp Lys Met Val
 65 70 75 80
 Ala Phe Asn Asp Leu Pro Gly Thr Asp Lys Val Glu Thr Leu Glu Thr
 85 90 95
 Met Ala Lys Asp Ser Leu Asn Asp Leu Thr Ile Val Gly Ser Val Ala
 100 105 110
 Asp Phe Ile Ala Gly Thr Tyr Ser Pro Glu Met Ile Gln Asp Ile Arg
 115 120 125
 His Asn Arg Gln Gly Val Ile Leu Ile Ala Lys Asp Gly Lys Ala Gln

130	135	140
Asp Leu Lys Ala Gln Met Leu Lys Leu Phe Gly Leu Tyr Val Asp Lys		
145	150	155
Gly Tyr Tyr Lys Val Ser Phe Pro Arg Glu Gln Arg Tyr Ala Tyr Tyr		160
	165	170
Asp Ala Asn Asp Pro Asp Ala Leu Lys Lys Leu Cys Gly Thr Gly Gly		175
	180	185
Leu Asn Pro His Thr Arg Ser Met Leu Gly Ser Pro Gly Pro Thr Asp		190
	195	200
Asp Pro Ser Ala Pro Glu Val Thr Glu Arg Ala Leu His Ala Met Lys		205
	210	215
Lys Ile Tyr Ile Ser Asn Arg Tyr Tyr Val Tyr Thr Ser Asp Tyr Lys		220
225	230	235
Tyr His Met Thr Gly Tyr Glu Thr Leu Leu Pro Tyr Thr Ala Asp Ile		240
	245	250
Lys Glu Tyr Leu Pro Arg Asp Asp Lys Lys Tyr Asp Gly Met Val Asp		255
	260	265
Arg Glu Trp Thr Ile Asp Ala Tyr Asn Leu Arg Ile Tyr Ala Pro Thr		270
	275	280
Asn Gly Asp Asn Met Leu Ala Val Tyr Ser Ser Gly Gly Asn Gly Phe		285
290	295	300
Ser Asn Arg Leu Asp His Ser Leu Val Ser Leu Asn Asn Ala Pro Met		305
	310	315
Tyr Glu Leu Trp Ala Leu Ile Trp Gly Leu Arg Asn Asn Ala Tyr Thr		320
	325	330
Lys Ile Asn Ile Arg Asp Asp Gln Ser Ser Gln Leu Asn Leu Lys Leu		335
	340	345
Ile Asp Phe Ala Pro Gly Leu Pro Glu Thr Glu Ser Thr Ile Glu His		350
	355	360
Ala Tyr Glu Lys Ser Val Gly Phe Asp Leu Gly Ala Thr Pro Val Leu		365
	370	375
Lys Gly Glu Tyr Arg Trp Gly Lys Ser Ile Thr Tyr Gln Leu Ala Glu		380
385	390	395
Met Thr Arg Glu Val Thr Arg Thr Ile Thr Asp Ala Glu Met Ser Tyr		400
	405	410
Cys Trp Lys Trp Tyr Pro Glu Thr Leu Phe Arg Gly Ser Lys Ala Met		415
	420	425
Asn Ala Glu Gly Met Ile Asp Ala Val Thr Met Ile Ser Pro Ala Trp		430
	435	440
Tyr Asp Ile Leu Tyr Asp His Val Ala Gly Thr Pro Gly Thr Asp Asn		445
	450	455
Pro Phe Cys Asp Tyr Asp Asn Asp Leu Gln Phe Asn Gln Asn Leu Leu		460
465	470	475
Asn Tyr Glu Gln Gln Cys Ala Ile Thr Ala Arg Thr Thr Gly Ala Ser		480
	485	490
Ala Gly Val Val Ala Ile Glu Ile Thr Asp Gly Met Val Leu Gln Arg		495
	500	505
Gly Gly Ala Trp Phe Thr Ser Trp Gly Ala Ala Val Ile His Ser Leu		510
	515	520
Pro Ser Ser Ala Gly Thr Ala Tyr Asn Thr Thr Val Asp Val His Lys		525
	530	535
Thr Thr Thr Val Trp Ile Asp Tyr Asn Asn Trp		540
545	550	555

<210> 9618
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 9618

Cys Ile Met Asn Asn Ser Ile Leu Ile Asn Asn Val Gln Ile Phe Asp
 1 5 10 15
 Gly Ser Ser Glu Gln Thr Gly Arg Gly Asn Val Leu Val Val Asn Ser
 20 25 30
 Arg Ile Lys Thr Val Ser Glu Ser Pro Ile Pro Thr Asp Gly Ile Pro
 35 40 45
 Asn Val Thr Ile Leu Asp Gly Lys Gly Lys Phe Leu Met Pro Gly Leu
 50 55 60
 Ile Asp Ala His Trp His Ala Tyr Met Ser Cys Asn Thr Met Met Asp
 65 70 75 80
 Leu Leu Thr Ala Asp Thr Ala Tyr Thr Gln Phe Lys Ala Gly Gln Glu
 85 90 95
 Ala Arg Ala Thr Leu Leu Arg Gly Phe Thr Thr Ile Arg Asp Ala Gly
 100 105 110
 Gly Pro Val Phe Gly Leu Lys Arg Ala Ile Asp Glu Gly Ile Leu Ser
 115 120 125
 Gly Pro Arg Ile Tyr Pro Ser Gly Ser Leu Ile Ser Gln Thr Gly Gly
 130 135 140
 Ala Trp Arg Phe Pro Gly Gly Ile
 145 150

<210> 9619

<211> 441

<212> PRT

<213> B.fragilis

<400> 9619

Ile Asn Met Lys His Phe Ile Ser Phe Cys Thr Phe Leu Leu Phe Ser
 1 5 10 15
 Thr Leu Leu Phe Ala Gln Ala Glu Arg Ser Leu Asp Glu Cys Ile Arg
 20 25 30
 Ile Ala Trp Lys Gln Asn Pro Ser Leu Arg Asn Ser Gly Ile Asp Ile
 35 40 45
 Lys Glu Ala Arg Met Asp Tyr Ile Ser Ser Val Ala Ser Phe Leu Pro
 50 55 60
 Arg Val Ser Val Ser Ala Glu Ala Gly Arg Asn Phe Gly Arg Ser Ile
 65 70 75 80
 Asp Pro Asn Thr Asn Gly Tyr Thr Asn Asp Thr Phe Asp Glu Gly Thr
 85 90 95
 Val Gly Leu Asp Met Thr Leu Ser Leu Phe Glu Gly Phe Thr Arg Ile
 100 105 110
 Asn Arg Val Arg Phe Glu Lys Met Asn Arg Asn Arg Ser Glu Trp Ala
 115 120 125
 Leu Lys Glu Arg Arg Asn Glu Leu Ala Cys Gln Val Thr Asp Ala Tyr
 130 135 140
 Tyr Lys Leu Leu Leu Glu Glu Arg Met Leu Asp Leu Ala Leu Glu Gln
 145 150 155 160
 Ser Arg Leu Ser Glu Arg Tyr Leu Lys Gln Thr Glu Ala Phe Val Glu
 165 170 175
 Leu Gly Leu Lys Ser Val Ser Asp Leu Gln Glu Val Lys Ala Arg Arg
 180 185 190
 Glu Gly Asp Ile Tyr Arg Tyr Gln Ala Arg Gln Asn Gly Cys Arg Leu
 195 200 205
 Ala Leu Leu Arg Leu Lys Gln Leu Leu Asn Leu His Ala Glu Asp Thr
 210 215 220
 Leu Ala Val Gln Asp Thr Ile Asn Tyr Glu Leu Leu Ser Ala Tyr Pro
 225 230 235 240
 Leu Pro Gln Thr Glu Glu Leu Tyr Thr Gln Ser Leu Val Ala Met Pro

Author	Year	Country	Sample Size	Study Design	Findings
Smith et al.	2015	USA	1,200	Longitudinal	Increased risk of depression in children of parents with mental illness.
Johnson et al.	2016	UK	800	Cross-sectional	Higher levels of anxiety in children of parents with anxiety disorders.
Lee et al.	2017	Canada	1,500	Family Study	Genetic factors play a significant role in the transmission of mental illness.
Wong et al.	2018	Australia	900	Case-control	Children of parents with schizophrenia have a higher risk of developing the same condition.
Chen et al.	2019	China	2,100	Population-based	Environmental factors, such as parenting style, mediate the risk of mental illness.
Miller et al.	2020	USA	1,300	Longitudinal	Early intervention for children of parents with mental illness can reduce long-term risks.
Nguyen et al.	2021	Vietnam	1,100	Cross-sectional	Stigma and social support are key factors influencing mental health outcomes.
Patel et al.	2022	India	1,400	Family Study	Family structure and cultural beliefs significantly impact mental health in children.
Kim et al.	2023	South Korea	1,600	Longitudinal	Parental mental health treatment adherence is linked to better child outcomes.
Alvarez et al.	2024	Spain	1,200	Cross-sectional	Resilience factors can buffer against the negative effects of parental mental illness.
Thompson et al.	2025	USA	1,800	Family Study	Genetic and environmental factors interact to influence the risk of mental illness.

[illegible][illegible]

<210> 9621
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 9621

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Ser Val Val Asn Tyr Asp Thr Leu Met His Ser Val Pro Asn Ala Thr
1          5          10          15
Tyr Phe Ile Pro Glu Ser Tyr Ser Tyr Arg Asn Asp Arg Ala Gly Leu
          20          25          30
Pro Thr Ile Ile Phe Thr Val Trp Gln Ala Thr Val Thr Asn Glu Ile
          35          40          45
Asn Ser Ile Asn Thr Thr Gly Thr Ala Lys Asn His Ile Phe Arg Ser
          50          55          60
Val Arg Lys Ala
65

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<210> 9622
 <211> 267
 <212> PRT
 <213> B.fragilis

<400> 9622

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Arg Glu Val Glu Phe Glu Ile Glu Lys Ala Phe Ser Pro Phe Ser Cys
1          5          10          15
Lys Glu Gly Arg Lys Arg Leu Pro Phe Asn Lys Ile Ile Met Ile Lys
          20          25          30
Thr Glu Lys Leu Ser Met Leu Phe Thr Thr Glu Glu Val Gln Thr Lys
          35          40          45
Ala Leu Asn Glu Val Thr Met Gln Val Glu Gln Gly Glu Phe Val Ala
          50          55          60
Ile Met Gly Pro Ser Gly Cys Gly Lys Ser Thr Val Leu Asn Ile Leu
65          70          75          80
Gly Thr Leu Asp Ser Pro Thr Ser Gly Ser Tyr Phe Phe Glu Gly Lys
          85          90          95
Gln Val Asp Lys Met Ser Glu Asn Gln Leu Thr Ala Leu Arg Lys Gly
          100          105          110
Asn Leu Gly Phe Ile Phe Gln Lys Leu Asn Leu Ile Asp Glu Leu Thr
          115          120          125
Val Tyr Asp Asn Val Glu Leu Pro Leu Val Tyr Leu Gly Ile Lys Pro
          130          135          140
Ala Val Arg Lys Glu Lys Val Lys Arg Val Leu Glu Lys Val Asn Leu
145          150          155          160
Leu His Arg Ala Ser His Phe Pro Gln Gln Leu Ser Gly Gly Gln Gln
          165          170          175
Gln Arg Val Ala Ile Ala Arg Ala Val Val Thr Asp Cys Lys Leu Leu
          180          185          190
Leu Ala Asp Glu Pro Thr Gly Asn Leu Asp Ser Val Asn Gly Val Glu
          195          200          205
Val Met Glu Leu Leu Arg Glu Leu Asn Arg Gln Gly Thr Thr Ile Ile
          210          215          220
Ile Val Thr His Ser Gln Arg Asp Ala Thr Tyr Ala His Arg Ile Ile
225          230          235          240
Arg Leu Leu Asp Gly Lys Ile Val Ala Glu Asp Ile Asn Arg Pro Leu
          245          250          255
Thr Glu Thr Ser Gly Pro Asn Thr Glu Ser Val
          260          265

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<210> 9623

<211> 74
 <212> PRT
 <213> B.fragilis

<400> 9623

Glu	Ser	Arg	Leu	Val	Ala	Lys	Asn	Ile	Asn	Gln	Ser	Arg	Ala	Ser	Phe
1				5					10					15	
Lys	Tyr	Pro	Phe	Ser	Arg	Ile	Ser	Lys	Lys	Ala	Ser	Arg	Phe	His	Ser
			20					25					30		
Lys	His	Asn	Thr	Leu	Ser	Ile	Ile	Thr	Leu	Leu	Leu	Ser	Lys	Val	Ser
		35					40					45			
Leu	Ser	Gln	Pro	Gly	Tyr	Ala	Gly	Arg	Asp	Lys	Asn	Leu	Thr	Ile	Phe
	50					55					60				
Thr	Lys	Asp	Thr	Lys	Lys	Asn	Lys	Leu	Leu						
65						70									

<210> 9624
 <211> 515
 <212> PRT
 <213> B.fragilis

<400> 9624

Pro	Met	Lys	Glu	Leu	Ile	Asn	Arg	Leu	Glu	Glu	Leu	Asn	Arg	Gln	Ala
1				5					10					15	
Glu	Lys	Gly	Gly	Gly	Asp	Ala	Arg	Ile	Glu	Lys	Gln	His	Ser	Val	Gly
			20					25					30		
Lys	Leu	Thr	Ala	Arg	Glu	Arg	Ile	Asp	Leu	Leu	Leu	Glu	Lys	Gly	Ser
		35					40					45			
Phe	Ile	Glu	Leu	Asp	Lys	Leu	Val	Thr	His	Arg	Cys	Thr	Asp	Phe	Gly
	50					55					60				
Met	Glu	Lys	Gln	Lys	Ile	Ser	Gly	Asp	Gly	Val	Val	Thr	Gly	Tyr	Gly
65					70					75				80	
Met	Ile	Gly	Lys	Arg	Leu	Val	Tyr	Val	Phe	Ala	Gln	Asp	Phe	Thr	Val
				85					90					95	
Phe	Gly	Gly	Ala	Leu	Ser	Glu	Thr	Tyr	Ala	Arg	Lys	Ile	Cys	Lys	Val
			100					105					110		
Met	Asp	Met	Ala	Met	Gln	Met	Gly	Ala	Pro	Ile	Ile	Gly	Leu	Asn	Asp
	115						120					125			
Ser	Gly	Gly	Ala	Arg	Ile	Gln	Glu	Gly	Val	Arg	Ser	Leu	Ala	Gly	Tyr
	130					135					140				
Ala	Glu	Ile	Phe	Leu	Arg	Asn	Ser	Leu	Ala	Ser	Gly	Val	Ile	Pro	Gln
145					150					155				160	
Ile	Ser	Ala	Ile	Met	Gly	Pro	Cys	Ala	Gly	Gly	Ala	Val	Tyr	Ser	Pro
			165						170					175	
Ala	Leu	Thr	Asp	Phe	Ile	Leu	Met	Val	Lys	Asn	Ser	Gly	Tyr	Met	Phe
			180					185					190		
Ile	Thr	Gly	Pro	Asp	Val	Val	Lys	Ser	Val	Thr	Gln	Glu	Glu	Val	Ser
	195						200					205			
Lys	Glu	Asp	Leu	Gly	Gly	Ala	Asp	Val	His	Thr	Met	Lys	Ser	Gly	Val
	210					215					220				
Ala	His	Leu	Ser	Ala	Glu	Asn	Asp	Ile	Glu	Cys	Ile	Asn	Tyr	Ile	Arg
225					230					235				240	
Glu	Leu	Ile	Ser	Tyr	Leu	Pro	Gly	Asn	Asn	Met	Glu	Glu	Pro	Pro	Phe
				245					250					255	
Val	Ala	Thr	Thr	Asp	Ser	Pro	Thr	Arg	Leu	Thr	Pro	Glu	Leu	Ser	Asp
			260					265					270		
Leu	Val	Pro	Thr	Asn	Pro	Asn	Gln	Pro	Tyr	Asp	Met	Lys	Glu	Met	Ile
		275					280					285			
Arg	Ala	Val	Ala	Asp	Asp	Asn	Ser	Phe	Phe	Glu	Leu	Gln	Glu	Glu	Phe

290	295	300
Ala Arg Asn Ile Val	Ile Gly Tyr Ile Arg Leu Asn Gly Lys Thr Ile	
305	310	315
Gly Val Val Ala Asn Gln Pro Leu Ala Leu Ala Gly Thr Leu Asp Ile		320
	325	330
Asn Ala Ser Val Lys Ala Ala Arg Phe Val Arg Phe Cys Asp Ala Phe		335
	340	345
Asn Ile Pro Leu Leu Thr Leu Val Asp Val Pro Gly Phe Leu Pro Gly		350
	355	360
Val Asp Gln Glu Tyr Gly Gly Ile Ile Arg Asn Gly Ala Lys Leu Leu		365
	370	375
Tyr Ala Tyr Cys Glu Ala Thr Val Pro Lys Val Thr Val Ile Ala Arg		380
385	390	395
Lys Ala Tyr Gly Gly Ala Tyr Asp Val Met Ser Ser Lys His Ile Arg		400
	405	410
Gly Asp Val Asn Leu Ala Tyr Pro Thr Ala Glu Ile Ala Val Met Gly		415
	420	425
Pro Asp Gly Ala Val Asn Ile Leu Phe Arg Lys Glu Ile Asp Lys Ala		430
	435	440
Ala Asp Thr Glu Ala Arg Arg Lys Glu Leu Gln Asp Asp Tyr Arg Ser		445
	450	455
Lys Phe Ala Asn Pro Tyr Arg Ala Ala Glu Leu Gly Tyr Val Asp Glu		460
465	470	475
Val Ile Asp Pro Ala Ile Thr Arg Met Arg Leu Ile Arg Ser Phe Glu		480
	485	490
Met Leu Ala Asn Lys Arg Gln Ser Asn Pro Pro Lys Lys His Ser Asn		495
	500	505
Leu Pro Leu		510
	515	

<210> 9625

<211> 229

<212> PRT

<213> B.fragilis

<400> 9625

Gln Lys Arg Asp Lys Lys Asn Asp Leu Arg Val Ser Asn Lys Arg Ser		
1	5	10
Met Lys Lys Asn Val Tyr Phe Ile Ser Gly Ile Asp Thr Asp Ala Gly		15
	20	25
Lys Ser Tyr Ala Thr Gly Phe Leu Ala Arg Glu Leu Asn Arg Lys Gly		30
	35	40
Gln Arg Thr Ile Thr Gln Lys Phe Ile Gln Thr Gly Asn Thr Gly His		45
	50	55
Ser Glu Asp Ile Asp Leu His Arg Arg Ile Met Gly Ile Ala Pro Thr		60
65	70	75
Asp Asp Asp Arg Glu Gly Leu Thr Met Pro Glu Ile Phe Ser Tyr Pro		80
	85	90
Cys Ser Pro His Leu Ala Ser Arg Ile Asp Gly Arg Pro Ile Asp Phe		95
	100	105
Asp Lys Ile Glu Arg Ala Thr Glu Glu Leu Ser Arg Arg Tyr Asp Val		110
	115	120
Val Leu Leu Glu Gly Ala Gly Gly Leu Met Val Pro Leu Thr Asp Glu		125
	130	135
Leu Leu Thr Ile Asp Tyr Ile Ala Gln Lys Glu Tyr Pro Leu Leu Phe		140
145	150	155
Val Thr Ser Gly Lys Leu Gly Ser Ile Asn His Thr Leu Leu Ser Leu		160
	165	170
Glu Ala Ile Lys Asn Arg Gly Ile Lys Leu Asp Thr Val Leu Tyr Asn		175

	180		185		190
Leu Tyr Pro Thr Val Glu Asp Arg Thr Ile Gln Glu Asp Thr Gln Leu					
	195		200		205
Phe Ile Gln Arg Tyr Leu Lys Lys Asp Phe Pro Glu Thr Lys Phe Cys					
	210		215		220
Met Val Pro Glu Leu					
225					

<210> 9626

<211> 509

<212> PRT

<213> B.fragilis

<400> 9626

Ser Arg Gly Glu His Arg Met Ile Lys Lys Ile Leu Val Ala Asn Arg					
1	5		10		15
Gly Glu Ile Ala Met Arg Ile Phe Arg Thr Cys Arg Val Met Asn Ile					
	20		25		30
Ala Thr Val Ala Ile Tyr Thr Trp Val Asp Arg Gly Ala Leu His Val					
	35		40		45
Arg Tyr Ala Glu Glu Ala Tyr Cys Ile Ser Asp Ser Pro Glu Asp Thr					
	50		55		60
Ser Tyr Leu Lys Pro Glu Lys Ile Leu Gln Ile Ala Lys Lys Thr Gly					
65	70		75		80
Ala Ala Ile His Pro Gly Tyr Gly Phe Leu Ser Glu Asn Ala Asp Phe					
	85		90		95
Ala Arg Arg Cys Glu Glu Glu Gly Val Ile Phe Ile Gly Pro Ser Ala					
	100		105		110
Asp Ile Ile Ala Arg Met Gly Ile Lys Thr Glu Ala Arg Arg Ile Met					
	115		120		125
Arg Glu Ala Gly Leu Pro Ile Val Pro Gly Thr Glu Asp Pro Val Lys					
	130		135		140
Gly Ile Ala Glu Ala Lys Lys Val Ala Ala Glu Val Gly Tyr Pro Ile					
145	150		155		160
Met Leu Lys Ala Leu Ala Gly Gly Gly Gly Lys Gly Met Arg Leu Val					
	165		170		175
Arg Ser Glu Glu Glu Met Glu Thr Ala Leu Arg Leu Ser Gln Ser Glu					
	180		185		190
Ala Gly Thr Ser Phe Gly Asn Asp Ala Val Tyr Ile Glu Lys Tyr Ile					
	195		200		205
Glu Asn Pro His His Ile Glu Val Gln Ile Leu Gly Asp Lys Tyr Gly					
	210		215		220
Asn Val Ile His Leu Tyr Glu Arg Glu Cys Ser Ile Gln Arg Arg Asn					
225	230		235		240
Gln Lys Val Ile Glu Glu Ser Pro Ser Pro Phe Val Lys Pro Glu Thr					
	245		250		255
Arg Ala Lys Met Leu Lys Val Ala Val Glu Ala Cys Lys Arg Ile Asn					
	260		265		270
Tyr Tyr Ser Ala Gly Thr Leu Glu Phe Met Met Asp Lys Asp Gln Asn					
	275		280		285
Phe Tyr Phe Leu Glu Met Asn Thr Arg Leu Gln Val Glu His Pro Val					
	290		295		300
Thr Glu Glu Cys Thr Gly Val Asp Leu Val Arg Asp Met Ile Leu Val					
305	310		315		320
Ala Ala Gly Asn Arg Leu Pro Tyr Arg Gln Glu Asp Val Glu Phe Arg					
	325		330		335
Gly Ala Ala Ile Glu Cys Arg Ile Tyr Ala Glu Asp Pro Glu Asn Asn					
	340		345		350
Phe Met Pro Ser Pro Gly Val Ile Thr Val Arg Glu Ala Pro Glu Gly					

355	360	365
Arg Asn Val Arg Leu Asp Ser Ala Ala Tyr Ala Gly Phe Glu Val Ser		
370	375	380
Leu His Tyr Asp Pro Met Ile Ala Lys Leu Cys Cys Trp Gly Arg Asn		
385	390	395
Arg Asp Ser Ala Ile Ser Asn Met Ala Arg Ala Leu Arg Glu Tyr Lys		
405	410	415
Ile Leu Gly Ile Lys Thr Thr Ile Pro Phe His Gln Arg Val Leu Lys		
420	425	430
Asn Ala Ala Phe Leu Lys Gly Glu Tyr Asp Thr Thr Phe Ile Asp Thr		
435	440	445
Arg Phe Asp Lys Glu Asp Leu Lys Arg Arg Gln Asn Thr Asp Pro Thr		
450	455	460
Val Ala Val Ile Ala Ala Ala Leu Lys His Tyr Glu Glu Glu Lys Glu		
465	470	475
Ala Ala Ser Arg Ala Thr Thr Leu Pro Val Val Gly Asp Ser Leu Trp		
485	490	495
Lys Tyr Tyr Gly Lys Leu Gln Met Thr Ala Asn Asn Tyr		
500	505	

<210> 9627

<211> 417

<212> PRT

<213> B.fragilis

<400> 9627

Leu Ser Met Asp Thr Met Ile Glu Arg Lys Pro Gly Met Lys Arg Lys		
1	5	10
His Tyr Tyr Ala Val Ala Gly Ala Val Val Leu Val Gly Leu Val Phe		
20	25	30
Tyr Phe Ile Phe Arg Asp Thr Ser Ser Ser Met Asn Val Glu Lys Asp		
35	40	45
Arg Leu Thr Ile Ala Thr Val Thr Arg Gly Glu Phe Ser Asp Tyr Ile		
50	55	60
Arg Val Ile Gly Gln Val Met Pro Asn Arg Ile Ile Tyr Met Asp Ala		
65	70	75
Ile Glu Gly Gly Arg Val Glu Glu Arg Leu Lys Glu Glu Gly Ala Ile		
85	90	95
Val Lys Ala Gly Asp Val Ile Leu Arg Leu Ser Asn Pro Leu Leu Asn		
100	105	110
Ile Gly Ile Met Gln Ser Glu Ala Asp Leu Ala Tyr Gln Glu Asn Glu		
115	120	125
Leu Arg Asn Thr Arg Ile Ser Met Glu Gln Glu His Leu Arg Leu Lys		
130	135	140
Gln Glu Arg Ile Gly Leu Asn Lys Glu Leu Ala Val Lys Gln Arg Arg		
145	150	155
Tyr Glu Gln Tyr Ser Arg Leu Ile Lys Glu Gln Leu Ile Ala Gln Glu		
165	170	175
Glu Phe Arg Leu Ala Ala Glu Glu Tyr Glu Ala Ala Arg Ala Gln Leu		
180	185	190
Glu Val Ile Asp Glu Arg Ile Arg Gln Asp Asn Phe Phe Arg Glu Ser		
195	200	205
Gln Ile Ser Ser Leu Asp Glu Asn Ile Arg Asn Met Lys Arg Ser Leu		
210	215	220
Ala Leu Val Arg Glu Arg Val Glu Asn Leu Lys Val Lys Ala Pro Ile		
225	230	235
Asp Gly Gln Val Gly Asn Leu Asp Ala Gln Ile Gly Gln Ser Ile Ala		
245	250	255
Ala Gly Glu His Ile Gly Gln Ile Ile Thr Pro Asp Leu Lys Val Gln		

260 265 270
 Ala Leu Ile Asp Glu Tyr Tyr Val Glu Arg Val Val Pro Gly Leu Pro
 275 280 285
 Ala Asp Phe Thr Arg Asp Gly Gly Asn Tyr Lys Leu Glu Val Thr Lys
 290 295 300
 Pro Tyr Pro Glu Val Lys Glu Gly Gln Phe Arg Thr Asp Leu Gln Phe
 305 310 315 320
 Thr Ala Gly Arg Pro Glu Asn Ile Arg Ala Gly Gln Thr Tyr His Ile
 325 330 335
 Asn Leu Gln Leu Gly Asp Pro Ala Gln Ala Ile Leu Val Pro Arg Gly
 340 345 350
 Gly Phe Phe Gln Ile Thr Gly Gly Arg Trp Met Tyr Val Leu Asp Glu
 355 360 365
 Ser Gly Lys Phe Ala Thr Arg Arg Pro Ile Arg Ile Gly Arg Gln Asn
 370 375 380
 Pro Gln Tyr Tyr Glu Val Thr Glu Gly Leu Lys Pro Gly Asp Arg Val
 385 390 395 400
 Ile Ile Ser Gly Tyr Glu Leu Phe Gly Asp Asn Glu Arg Leu Asn Leu
 405 410 415
 Lys

<210> 9628
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 9628
 Ala Ser Ile Arg Phe Thr Phe Ser Cys Gln Pro Glu Val Arg Ser Asn
 1 5 10 15
 Arg Thr Asp Ala Gln Ala Thr Ala His Ala Asn Gly Phe Pro Ile Asn
 20 25 30
 Val Gly Pro Cys Met Asn Ala Pro Gly Ala Trp Leu Glu Met Gln Ser
 35 40 45
 Ala Thr Ser Leu Val Val Ser Thr Ala Asp Lys Val Met Tyr Pro Pro
 50 55 60
 Val Asn Ala Leu Pro Met His Met Met Ser Gly Ser Thr Pro Ala Cys
 65 70 75 80
 Ser Gln Ala Lys Ser Phe Pro Val Arg Pro Asn Pro Val Ala Ile Ser
 85 90 95
 Ser Lys Ile Asn Ser Thr Pro Tyr Arg Trp Gln Arg Arg Ala Ala Ser
 100 105 110
 Leu Lys Tyr Ser Gly Trp
 115

<210> 9629
 <211> 242
 <212> PRT
 <213> B.fragilis

<400> 9629
 Asn Leu Ser Arg Asp Ile Val Cys Leu Met Arg Phe Ile Asn Ser Ser
 1 5 10 15
 Phe Thr Asp Ala Gly Phe Asn Leu Ala Glu Glu Tyr Leu Leu Lys
 20 25 30
 Gln Gly Thr Glu Asp Val Phe Met Leu Trp Gln Ser Ala Pro Ser Val
 35 40 45
 Ile Ile Gly Lys His Gln Arg Val Glu Thr Glu Val Asn Arg Met Met
 50 55 60

Ala	Glu	Gln	Asn	Lys	Ile	Pro	Val	Phe	Arg	Arg	Phe	Ser	Gly	Gly	Gly
65					70					75					80
Ala	Val	Tyr	His	Asp	Leu	Gly	Asn	Ile	Asn	Leu	Thr	Phe	Ile	Glu	Thr
			85						90					95	
Thr	Cys	Leu	Ala	Arg	Phe	Glu	Thr	Tyr	Leu	Glu	Arg	Thr	Val	Glu	Met
		100					105						110		
Leu	Thr	Ala	Ala	Gly	Val	Ala	Val	Arg	Gly	Asp	Glu	Arg	Leu	Gly	Ile
	115						120					125			
Tyr	Val	Asp	Gly	Arg	Lys	Val	Ser	Gly	Ser	Ala	Gln	Cys	Val	His	Arg
	130					135					140				
Asn	Arg	Ala	Met	Tyr	His	Cys	Thr	Leu	Leu	Tyr	Asp	Thr	Asn	Leu	Val
145					150					155					160
Leu	Leu	Asn	Lys	Leu	Leu	Glu	Val	Glu	Gly	Leu	Glu	Glu	Lys	Val	Ala
			165						170					175	
Val	His	Pro	Ala	Val	Arg	Ser	Val	Arg	Ser	Glu	Val	Thr	Asn	Leu	Lys
			180					185					190		
Glu	Tyr	Met	His	Pro	Ala	Leu	Ser	Thr	Asp	Lys	Phe	Arg	Glu	Trp	Val
	195						200					205			
Phe	Arg	Tyr	Phe	Ala	Gly	Pro	Ser	Val	Ala	Glu	Ala	Phe	Ser	Lys	Glu
	210					215					220				
Glu	Leu	Ala	Ile	Ile	Glu	Gly	Leu	Arg	Glu	Asn	Lys	Tyr	Asn	Thr	Ile
225					230					235					240
Cys	Asn														

<210> 9630

<211> 68

<212> PRT

<213> B.fragilis

<400> 9630

Val	Ala	Ser	Arg	Cys	Glu	Trp	Val	Thr	Met	Ile	Met	Val	Val	Pro	Cys
1				5					10					15	
Arg	Phe	Asn	Ser	Arg	Asn	Asn	Ser	Ile	Thr	Ser	Thr	Pro	Phe	Thr	Glu
		20					25						30		
Ser	Arg	Phe	Pro	Val	Gly	Ser	Ser	Ala	Ser	Asn	Asn	Leu	Gln	Ser	Val
	35					40						45			
Thr	Thr	Ala	Arg	Ala	Met	Ala	Thr	Arg	Cys	Cys	Cys	Pro	Pro	Glu	Ser
	50					55					60				
Cys	Cys	Gly	Lys												
65															

<210> 9631

<211> 174

<212> PRT

<213> B.fragilis

<400> 9631

Leu	Lys	Lys	Arg	Ser	Ile	Met	Lys	Lys	Ile	Gly	Ile	Phe	Tyr	Ala	Ala
1				5					10					15	
Lys	Ala	Asp	Lys	Thr	Ser	Trp	Val	Ala	Glu	Lys	Ile	Gln	Lys	Glu	Phe
		20					25						30		
Gly	Thr	Ser	Ala	Glu	Ser	Val	Ala	Ile	Glu	Asn	Ala	Trp	Gln	Asn	Asp
	35					40						45			
Phe	Glu	Ala	Tyr	Asp	Asn	Phe	Ile	Val	Gly	Ala	Ser	Thr	Trp	Phe	Asp
	50					55					60				
Gly	Glu	Leu	Pro	Thr	Tyr	Trp	Asp	Glu	Leu	Leu	Pro	Glu	Leu	Arg	Thr
65					70					75				80	
Leu	Gln	Leu	Lys	Gly	Lys	Lys	Val	Ala	Ile	Phe	Gly	Leu	Gly	Asp	Gln

[illegible]

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

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His 1	Arg	Glu	Arg	Met 5	Ile	Gly	Asn	Tyr	Trp 10	Asn	Ser	Ala	Tyr	Arg 15	Asn
Leu	Met	Lys	Arg 20	Lys	Gly	Phe	Ser	Phe 25	Ile	Asn	Val	Phe	Gly 30	Leu	Ala
Val	Gly 35	Met	Ala	Ser	Ala	Leu	Leu 40	Ile	Leu	Thr	Tyr	Val 45	Thr	Phe	Glu
Phe	Ser 50	Phe	Asp	Lys	Met 55	His	Gln	Lys	Tyr	Glu	Arg 60	Ile	Phe	Arg	Val
Glu 65	Ser	Thr	Phe	Tyr	Glu 70	Gly	Glu	Val	Gln	Thr 75	Asp	Tyr	Trp	Ala	Ser 80
Ser	Ser	Phe	Gly 85	Tyr	Gly	Ser	Ala	Met	Lys 90	Glu	Asn	Leu	Ala 95	Gly	Ile
Glu	Asp	Tyr	Thr 100	Arg	Val	Val	Ser	Leu	Tyr 105	Gln	Pro	Glu	Gln 110	Ile	Val
Lys	Tyr 115	Gly	Glu	Leu	Thr	Leu	Arg 120	Glu	Asn	Gln	Ile	Ala 125	Tyr	Ala	Asp
Pro	Gly 130	Phe	Phe	Arg	Leu	Phe	Asp 135	Phe	Glu	Leu	Val 140	Lys	Gly	Asp	Lys
Ala 145	Thr	Cys	Leu	Ser	Met 150	Pro	Arg	Gln	Val	Val 155	Ile	Thr	Glu	Arg	Ile 160
Ala	Arg	Lys	Tyr 165	Gln	Asp	Glu	Asp 170	Ile	Cys	Glu	Val	Thr	Gly 175	Val	Met
Phe	Thr	Gly 180	Pro	Tyr	Asp	Lys	Val 185	Ile	His	Tyr	Asn 205	Phe	Leu	Ile	Ser
Lys	Glu 195	Met	Pro	Ser	Asn	Ser	His 200	Ile	His	Tyr	Asn 205	Phe	Leu	Ile	Ser
Tyr	Lys 210	Ser	Leu	Gly	Gln	Tyr 215	Leu	His	Asp	Tyr	Trp 220	Tyr	Lys	His	Glu
Val 225	Tyr	Thr	Tyr	Val	Leu 230	Leu	Asp	Ser	Pro	Glu	Arg 235	Lys	Glu	Glu	Ile 240
Glu	Lys	Ala	Phe 245	Pro	Ala	Met	Ser	Glu	Lys 250	Tyr	Lys	Thr	Asp	Glu	Ala 255
Leu	Lys	Asn	Lys 260	Ile	Trp	Gly	Val 265	Ser	Leu	Thr	Pro	Leu	Ala 270	Asp	Ile
His	Leu 275	Lys	Pro	Gln	Val	Gly 280	Tyr	Glu	Ala	Glu	Ile 285	Lys	Gly	Asn	Arg
Thr	Ala 290	Met	Ile	Ala	Leu	Ile 295	Phe	Ala	Ala	Ile 300	Ala	Ile	Leu	Ala	Ile
Ala 305	Trp	Ile	Asn	Tyr 310	Ile	Asn	Leu	Thr	Val	Ala 315	Arg	Ser	Met	Glu	Arg 320
Ala	Lys	Glu	Val	Gly	Val	Arg	Arg	Val	Ile	Gly	Ala	Phe	Arg	Lys	Gln

[illegible]

Gly Lys Pro Ala Arg Ser Leu Arg Tyr Glu
805 810

<210> 9633
<211> 513
<212> PRT
<213> B.fragilis

<400> 9633

Met Phe Leu Arg Arg Ile Arg Leu Pro Leu Val Gly Lys His Leu Lys
1 5 10 15
Thr Ala Tyr Gln Ala His Thr Gly Tyr Gly Arg Ile Asp His Leu Val
20 25 30
His Val Ala Gln Leu Gly Ser Pro Val Gly Val Gly Lys Leu Ala Ala
35 40 45
Ile Val Ile Leu Gln Leu Phe Thr Pro Gly Phe Ser Val Gly Ser Phe
50 55 60
Val Asn Leu Phe Ala Glu Lys Asn Val His Arg Ser Ile Gly Ala His
65 70 75 80
His Gly Tyr Phe Gly Ser Gly Ile Ser Gln Ile His Ile Ser Pro Asp
85 90 95
Val Leu Gly Thr His Tyr Ile Ile Ser Ser Ala Ile Ser Phe Thr Gly
100 105 110
Asn His Arg Asn Leu Arg His Arg Ser Phe Thr Ile Gly Ile Lys Gln
115 120 125
Leu Gly Thr Val Ala Asp Asp Ala Ala Ile Leu Leu Ile Tyr Pro Arg
130 135 140
Lys Glu Ser Arg Tyr Ile Tyr Gln Cys Glu Gln Trp Asn Ile Glu Arg
145 150 155 160
Ile Ala Glu Thr Asp Lys Thr Gly Cys Phe Asn Arg Gly Ile Asp Ile
165 170 175
Glu Arg Ser Gly Gln Cys Gln Arg Leu Ile Gly His His Pro Tyr Arg
180 185 190
Leu Pro Val Gln Ala Asn Ile Thr Asp Asn Asp Val Thr Gly Lys Leu
195 200 205
Phe Leu Gln Phe Lys Glu Thr Val Ile Val Arg His Cys Thr Asp His
210 215 220
Leu Phe His Ile Ile Arg Leu Ile Arg Ile Gly Arg His Gln Ile Arg
225 230 235 240
Gln Phe Gly Arg Lys Pro Arg Arg Arg Ile Gly Ser Ser Asn Lys Arg
245 250 255
Arg Leu Phe His Ile Ile Ser Gly Gln Ile Arg Asn Gln Phe Thr Asn
260 265 270
Val Ile Asp Ala Phe Asn Ile Ile Phe Gly Arg Glu Val Cys His Pro
275 280 285
Arg Leu His Gly Met Asp Ile Arg Pro Ser Gln Ile Phe Phe Ala Asp
290 295 300
Phe Phe Leu Cys His Ala Leu His His Ile Gly Thr Gly Asp Lys His
305 310 315 320
Ile Thr Gly Ile Phe His His Gln Asp Lys Ile Gly Gln Cys Arg Arg
325 330 335
Ile Asp Arg Pro Thr Arg Thr Arg Thr His Asp Gly Thr Asp Leu Arg
340 345 350
Asp Asp Thr Gly Ser Gln Arg Ile Thr Gln Lys Tyr Leu Arg Ile Thr
355 360 365
Gly Gln Arg Thr Asp Ser Leu Asn Thr Gly Ser Ser Arg Ile Val
370 375 380
Gln Pro Asp Asp Gly Cys Ser His Leu His Ser His Ile His His Phe
385 390 395 400

Thr Asn Leu Pro Gly Ile Arg Phe Gly Gln Cys Thr Ala Lys Asn Gly
 405 410 415
 Glu Val Leu Ser Lys Asn Ile His Lys Pro Phe Ala Asp His Thr Ile
 420 425 430
 Ser Gly Tyr Asn Ser Ile Thr Gly Tyr Phe Leu Phe Leu His Thr Glu
 435 440 445
 Ile Arg Thr Thr Met Gly His Gln Phe Ile Glu Phe Asn Lys Arg Ser
 450 455 460
 Phe Leu Gln Lys Gln Val Asp Thr Phe Thr Cys Arg Gln Phe Ser Asp
 465 470 475 480
 Arg Met Leu Phe Leu Asp Thr Gly Val Ser Thr Thr Phe Phe Gly Leu
 485 490 495
 Pro Val Gln Leu Phe Gln Ala Ile Asp Lys Leu Phe His Arg Leu Leu
 500 505 510
 Phe

<210> 9634

<211> 144

<212> PRT

<213> B.fragilis

<400> 9634

Arg Lys Trp Leu Val Thr Gly Lys Val Tyr Asp Val Asp Tyr Asn Val
 1 5 10 15
 Gly Gly Asp Ser Ile Tyr Ser Ile Ile Ile Asn His His Ser His Gly
 20 25 30
 Val Gln Ile Ser Pro Thr Ser His Ser Ser Tyr Thr Ile Met Asn Lys
 35 40 45
 Gly Glu Leu Tyr Gln Ile Glu Leu Lys Gly Glu Leu Glu Lys Ile His
 50 55 60
 Asn Ala Arg Ser Gly Ala Asp Ala Val Gly Arg Gln Val Val Val Ala
 65 70 75 80
 Pro Met Pro Gly Val Ile Leu Lys Thr Tyr Val Arg Lys Gly Asp Glu
 85 90 95
 Val Lys Lys Gly Asp Pro Leu Cys Val Leu Val Ala Met Lys Met Glu
 100 105 110
 Asn Glu Ile Arg Ser Val Ala Asp Gly Val Val Lys Glu Ile Phe Val
 115 120 125
 Glu Glu Asn Thr Lys Val Gly Leu Asn Asp Arg Ile Met Val Val Glu
 130 135 140

<210> 9635

<211> 433

<212> PRT

<213> B.fragilis

<400> 9635

Asp Glu Asp Gly Gln Ser Gly Glu Thr Thr Asp His Asp Thr Lys His
 1 5 10 15
 Leu Val Leu Thr Ile Leu Met Ile Glu Leu Ile Glu Lys Glu Glu
 20 25 30
 Val Ile Ala Gly Ile Leu Glu Ile Ala Met Pro Asp Leu Leu His Leu
 35 40 45
 Arg Asn Gln Phe Leu Arg Val Ala Gly Leu His His Asn Gly Asp Val
 50 55 60
 Ala Leu Arg Gln Pro Thr Asp Leu Ile Phe Val Asp Gln His Asn Arg
 65 70 75 80
 Gly Ile Ile Leu Val Glu Cys Leu Leu Met Val Val Leu His His Ser

				85					90					95	
Asp	Asn	Leu	His	Arg	Gly	Ile	Gly	Thr	Phe	His	Leu	Tyr	Leu	Phe	Ala
			100					105					110		
Glu	Ser	Leu	Phe	Val	Arg	Gly	Asn	Ser	Gln	Val	Thr	Asp	Ser	Arg	Leu
		115					120					125			
Val	Asp	His	Gln	Leu	Ile	His	Ile	Val	Ser	Ile	Ile	Phe	Gly	Glu	Ser
		130				135					140				
Ala	Pro	Cys	His	Gln	Leu	Gln	Ser	Ile	Ser	Ile	Asn	Ile	Ile	Arg	Val
145					150						155				160
Ala	Tyr	Gln	His	Phe	Ile	Lys	Ala	Ile	Leu	Leu	Gln	Ser	Ile	Thr	Leu
				165					170					175	
Ser	Pro	Val	Arg	Gln	Glu	Gly	Ser	His	Leu	Phe	Ala	Arg	His	Gly	Thr
			180					185					190		
Arg	Glu	Gly	Asn	Phe	Val	Tyr	Gln	Arg	Gln	Ala	Gly	Asn	Gly	Leu	Leu
		195					200					205			
His	Gly	Phe	Glu	Phe	Arg	Val	His	Ala	Phe	Gly	Pro	Ser	Gly	Lys	Phe
		210				215					220				
Asp	Asn	Gln	Ser	Leu	Val	Arg	Leu	His	Ser	Gln	Arg	Leu	Ile	Ala	His
225					230					235					240
Glu	Val	Gln	Leu	Arg	Lys	His	Asn	Gln	Cys	Ala	Ala	Glu	Gln	Asn	His
			245						250					255	
Arg	Cys	Arg	Val	Leu	Asn	Asp	Tyr	Gln	Tyr	Phe	Ala	Ser	Ala	Phe	Ala
			260					265					270		
Arg	Leu	Ala	Val	Gln	Glu	Leu	Ser	Leu	Gln	Gln	Arg	Asn	Arg	Phe	Pro
		275					280					285			
Val	Glu	Lys	Arg	Gln	Cys	Arg	Ile	Val	Thr	Gly	Glu	Glu	Asn	Ser	Pro
		290				295					300				
Tyr	Lys	Tyr	Asp	Gln	Lys	Gln	Lys	Pro	Pro	Val	Ser	Arg	Gln	Pro	Asn
305					310					315					320
Gly	Glu	Ser	Tyr	Arg	Thr	Ala	Tyr	Gln	Leu	Ile	Glu	Val	Trp	Gln	Asp
			325					330						335	
Gln	Leu	Asp	Gln	Ser	His	Cys	Gln	Tyr	Gln	Cys	Asn	Gln	Val	His	Asp
			340					345					350		
Gln	Gly	Leu	Lys	Gln	Glu	Leu	Arg	Tyr	Lys	Leu	Leu	Ala	Glu	Ser	Ser
		355					360					365			
Tyr	Tyr	Pro	Ala	His	Ser	Tyr	Leu	Leu	Gly	Thr	Phe	His	Arg	Ala	Gly
		370				375					380				
His	Ser	Gln	Val	Asp	Ile	Ile	Asp	Pro	Gly	Asn	Ser	Gln	Asn	Gly	Asn
385				390						395					400
Cys	Ser	Lys	Asp	Gln	Gly	Asp	His	Gly	Arg	Thr	Val	Ser	Leu	Asp	Phe
			405						410					415	
Gly	Leu	Val	Thr	Asn	Leu	Arg	Phe	Lys	Met	Asn	Ile	Gly	Lys	Arg	Cys
			420					425					430		

Gln

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 <211> 502
 <212> PRT
 <213> B.fragilis

<400> 9636
 Gln Gln Tyr Gly Leu Tyr His Gln Ser Asn Lys Leu Met Lys Leu Lys
 1 5 10 15
 Arg Leu Tyr Pro Gln Lys Ser Val Asn Ser Leu His Ser Glu Thr
 20 25 30
 Gly Thr Gly Cys Glu Val Ala Gly Cys Pro Pro Leu Arg Lys Glu Ala
 35 40 45
 Leu Leu Phe Phe Ala Gly Trp Gly Met Asp Glu Thr Pro Phe Met His

50	Asn	Leu	Pro	Pro	Asn	Lys	Asp	Leu	Ile	Ile	Cys	Tyr	Asp	Tyr	Arg	Ser
65	Leu	Asp	Phe	Asp	Ser	Thr	Leu	Leu	Ser	Thr	Tyr	Asp	Gly	Ile	Tyr	Val
					85	Gly	Val	Trp	Ala	Ala	Ser	Gln	Val	Leu	Pro	Asp
					100				105					110		
	Ser	Asn	Leu	Pro	Leu	Lys	Gln	Ser	Ile	Ala	Ile	Asn	Gly	Thr	Pro	Phe
					115				120				125			
	Pro	Ile	Asp	Asp	Met	Arg	Gly	Ile	Pro	Pro	Ala	Ile	Phe	Glu	Gly	Thr
					130				135				140			
	Leu	Asn	Asn	Leu	Asn	Glu	Ala	Thr	Leu	Gln	Lys	Phe	Arg	Arg	Arg	Met
					145				150				155			160
	Cys	Gly	Ser	Gly	Ser	Ala	Phe	Gln	Ala	Phe	Leu	Glu	Ile	Ala	Pro	Gln
					165				170						175	
	Arg	Pro	Val	Glu	Glu	Leu	Lys	Glu	Glu	Leu	Val	Ala	Ile	Gly	Arg	Gln
					180				185					190		
	Tyr	Ser	Glu	Leu	Pro	Pro	Ser	Thr	Phe	Val	Trp	Asn	Lys	Ala	Ile	Ile
					195				200				205			
	Gly	Glu	Ser	Asp	His	Ile	Phe	Pro	Pro	Lys	Asn	Gln	Glu	Gln	Ala	Trp
					210				215				220			
	Gln	Lys	Tyr	Cys	Asn	Glu	Ile	Gln	Arg	Tyr	Asp	Gly	Ala	His	Tyr	Asp
					225				230				235			240
	Glu	Lys	Ile	Leu	Lys	Glu	Asn	Leu	Ala	Pro	Ala	Ala	Ser	Ser	Lys	Leu
					245				250						255	
	Leu	Ile	Ala	Gln	Arg	Phe	Thr	Lys	Ala	Ile	Gly	Thr	Tyr	Pro	His	Glu
					260				265						270	
	Ala	Arg	Val	Gln	Gln	Gln	Ile	Ala	Arg	Lys	Met	Cys	Ser	Leu	Leu	Gln
					275				280				285			
	Gln	His	Leu	Pro	Ala	His	Ser	Leu	Arg	Arg	Val	Val	Glu	Phe	Gly	Cys
					290				295				300			
	Gly	Thr	Gly	Thr	Tyr	Ser	Arg	Leu	Leu	Leu	Arg	Ser	Phe	Arg	Pro	Glu
					305				310				315			320
	His	Leu	Leu	Leu	Asn	Asp	Leu	Cys	Glu	Glu	Met	Arg	His	Ser	Cys	Arg
					325				330						335	
	Asp	Ile	Leu	Asn	Glu	Arg	Val	Ser	Phe	Leu	Pro	Gly	Asp	Ala	Glu	Ala
					340				345					350		
	Leu	Asp	Phe	Pro	His	Gly	Thr	Glu	Leu	Ile	Thr	Ser	Cys	Ser	Val	Leu
					355				360				365			
	Gln	Trp	Phe	Glu	His	Pro	Asp	Ala	Phe	Phe	Arg	Lys	Cys	Glu	Asn	Ile
					370				375				380			
	Leu	Asn	Ala	Gln	Gly	Tyr	Ile	Ala	Phe	Ser	Thr	Phe	Gly	Lys	Glu	Asn
					385				390				395			400
	Met	Lys	Glu	Ile	Arg	Gln	Leu	Thr	Gly	Gln	Gly	Leu	Ala	Tyr	Arg	Ser
					405				410						415	
	Arg	Glu	Glu	Leu	Thr	Thr	Ser	Leu	Ser	Ala	Leu	Tyr	Asp	Ile	Val	His
					420				425					430		
	Thr	Glu	Glu	Glu	Val	Ile	Ser	Leu	Asn	Phe	Asn	Asn	Pro	Met	Glu	Val
					435				440				445			
	Leu	Tyr	His	Leu	Lys	Gln	Thr	Gly	Val	Thr	Gly	Thr	Cys	Asn	Gln	Ser
					450				455				460			
	Trp	Thr	Arg	Ser	Lys	Leu	Asn	Leu	Phe	Cys	Gln	Glu	Tyr	Glu	Arg	Leu
					465				470				475			480
	Phe	Ser	Pro	Gly	Lys	Gly	Ser	Val	Ser	Leu	Thr	Tyr	His	Pro	Ile	Tyr
					485				490						495	
	Ile	Ile	Ala	Lys	Lys	Arg										
					500											

<211> 376
 <212> PRT
 <213> B.fragilis

<400> 9637

Arg	Thr	Leu	Ile	His	Pro	Gly	Lys	Pro	Ser	Gly	Thr	Asn	Tyr	Phe	Gln
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Ser	Arg	Ser	Ala	Leu	Gly	Ala	Lys	His	Phe	Asn	Trp	Cys	Asn	Val	Ile
		20					25					30			
Asn	Arg	Glu	Glu	Ser	Leu	Phe	Ser	Phe	Leu	Phe	Ile	Met	Lys	Glu	Lys
		35					40					45			
Tyr	Trp	Lys	Tyr	Ser	Leu	Ile	Ile	Ile	Ile	Ile	Gly	Leu	Gly	Ile	Ile
	50				55						60				
Leu	Phe	Arg	Gln	Ile	Thr	Pro	Phe	Leu	Gly	Gly	Leu	Leu	Gly	Ala	Leu
65				70					75					80	
Thr	Ile	Tyr	Ile	Leu	Val	Arg	Lys	Gln	Met	Ile	Tyr	Leu	Gly	Ala	Arg
			85					90						95	
Met	Lys	Arg	Ser	Phe	Ala	Ala	Leu	Leu	Ile	Thr	Gly	Glu	Ala	Ile	Leu
			100					105						110	
Cys	Phe	Leu	Val	Pro	Ile	Ser	Leu	Ile	Val	Trp	Met	Leu	Val	Asn	Lys
		115					120					125			
Leu	Gln	Asp	Ile	Asn	Leu	Asp	Pro	Gln	Ala	Ile	Ile	Thr	Pro	Val	Glu
	130					135						140			
Glu	Leu	Ala	Gly	Ile	Ile	Lys	Ala	Lys	Thr	Gly	Tyr	Asp	Val	Leu	Gly
145				150						155				160	
Ser	Asp	Thr	Leu	Ser	Phe	Ile	Val	Ser	Leu	Leu	Pro	Lys	Ile	Gly	Gln
			165					170						175	
Ala	Val	Met	Gly	Gly	Ile	Ser	Ser	Phe	Ala	Val	Asn	Leu	Phe	Val	Leu
			180					185						190	
Val	Phe	Val	Leu	Tyr	Phe	Met	Leu	Ile	Gly	Gly	Thr	Lys	Met	Glu	Ala
	195						200					205			
Tyr	Ile	Asp	Asp	Ile	Leu	Pro	Phe	Asn	Glu	Lys	Asn	Thr	Arg	Glu	Val
	210					215					220				
Thr	His	Glu	Ile	Asn	Met	Ile	Val	Arg	Ser	Asn	Ala	Ile	Gly	Ile	Pro
225				230						235				240	
Leu	Leu	Ala	Val	Ile	Gln	Gly	Gly	Val	Ala	Leu	Ile	Gly	Tyr	Phe	Ile
			245					250						255	
Phe	Gly	Ala	Pro	Asn	Ala	Trp	Leu	Ile	Gly	Val	Leu	Thr	Cys	Phe	Ser
		260						265						270	
Thr	Ile	Ile	Pro	Met	Val	Gly	Thr	Ala	Leu	Val	Trp	Phe	Pro	Val	Ala
		275					280						285		
Ala	Tyr	Leu	Ala	Leu	Thr	Gly	Glu	Trp	Ala	Asn	Ala	Ile	Gly	Leu	Ala
	290					295						300			
Ala	Tyr	Gly	Gly	Ile	Val	Val	Ser	Gln	Cys	Asp	Asn	Leu	Ile	Arg	Phe
305				310						315				320	
Ile	Leu	Gln	Lys	Lys	Met	Ala	Asp	Thr	His	Pro	Leu	Ile	Thr	Ile	Phe
			325					330						335	
Gly	Val	Val	Ile	Gly	Leu	Ser	Leu	Phe	Gly	Phe	Met	Gly	Val	Ile	Phe
		340						345					350		
Gly	Pro	Leu	Val	Leu	Ser	Leu	Phe	Leu	Leu	Phe	Val	Asp	Met	Phe	Lys
	355						360						365		
Lys	Glu	Tyr	Leu	Asp	Asn	Lys	Lys								
	370					375									

<210> 9638
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 <212> PRT
 <213> B.fragilis

<400> 9638

Leu Lys Ile Met Pro Thr Ile Ser Ile Arg Gly Thr Glu Met Pro Ala
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 Ser Pro Ile Arg Lys Leu Ala Pro Leu Ala Asp Ala Ala Lys Gln Arg
 20 25 30
 Gly Ile His Val Phe His Leu Asn Ile Gly Gln Pro Asp Leu Pro Thr
 35 40 45
 Pro Gln Ala Ala Ile Asp Ala Ile Arg Asn Ile Asp Arg Lys Val Leu
 50 55 60
 Glu Tyr Ser Pro Ser Ala Gly Tyr Arg Ser Tyr Arg Glu Lys Leu Val
 65 70 75 80
 Gly Tyr Tyr Glu Lys Phe Asn Ile Asn Leu Thr Ala Asp Asp Ile Ile
 85 90 95
 Ile Thr Thr Gly Gly Ser Glu Ala Val Leu Phe Ser Phe Met Ser Cys
 100 105 110
 Leu Asn Pro Gly Asp Glu Ile Ile Val Pro Glu Pro Ala Tyr Ala Asn
 115 120 125
 Tyr Met Ala Phe Ala Ile Ser Ala Gly Ala Lys Ile Arg Thr Ile Ala
 130 135 140
 Thr Thr Ile Glu Glu Gly Phe Ser Leu Pro Lys Val Glu Lys Phe Glu
 145 150 155 160
 Glu Leu Ile Asn Glu Arg Thr Lys Gly Ile Leu Ile Cys Asn Pro Asn
 165 170 175
 Asn Pro Thr Gly Tyr Leu Tyr Thr Arg Arg Glu Met Asn Gln Ile Arg
 180 185 190
 Asp Leu Val Lys Lys Tyr Asp Leu Phe Leu Phe Ser Asp Glu Val Tyr
 195 200 205
 Arg Glu Phe Ile Tyr Thr Gly Ser Pro Tyr Ile Ser Ala Cys His Leu
 210 215 220
 Glu Gly Ile Glu Asn Asn Val Val Leu Ile Asp Ser Val Ser Lys Arg
 225 230 235 240
 Tyr Ser Glu Cys Gly Ile Arg Ile Gly Ala Leu Ile Thr Lys Asn Lys
 245 250 255
 Glu Val Arg Asp Ala Val Met Lys Phe Cys Gln Ala Arg Leu Ser Pro
 260 265 270
 Pro Leu Ile Gly Gln Ile Ala Ala Glu Ala Ser Leu Asp Ala Pro Glu
 275 280 285
 Glu Tyr Ser Arg Glu Thr Tyr Asp Glu Tyr Val Glu Arg Arg Lys Cys
 290 295 300
 Leu Ile Asp Gly Leu Asn Arg Ile Pro Gly Val Tyr Ser Pro Ile Pro
 305 310 315 320
 Met Gly Ala Phe Tyr Thr Val Ala Lys Leu Pro Val Asp Asp Ser Asp
 325 330 335
 Lys Phe Cys Ala Trp Cys Leu Ser Glu Phe Glu Tyr Glu Gly Gln Thr
 340 345 350
 Val Phe Met Ala Pro Ala Ser Gly Phe Tyr Thr Thr Pro Gly Ser Gly
 355 360 365
 Lys Asn Glu Val Arg Ile Ala Tyr Val Leu Lys Lys Glu Asp Leu Thr
 370 375 380
 Arg Ala Leu Phe Val Leu Gln Lys Ala Leu Glu Ala Tyr Pro Gly Arg
 385 390 395 400
 Thr Glu

<210> 9639

<211> 695

<212> PRT

<213> B.fragilis

<400> 9639

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Thr Val Ile Ile Cys Val Ile Cys Gly Glu Asn Pro Lys Pro Thr Leu
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Asn Met Lys Lys Tyr Asp Ile Lys Thr Thr Asp Glu Gln Thr Leu Arg
20      25      30
Lys Trp Tyr His Leu Met Thr Leu Gly Arg Ala Leu Asp Glu Lys Ala
35      40      45
Pro Ala Tyr Leu Leu Gln Ser Leu Gly Trp Ser Tyr His Ala Pro Tyr
50      55      60
Ala Gly His Asp Gly Ile Gln Leu Ala Ile Gly Gln Val Phe Thr Leu
65      70      75      80
Gly Glu Asp Tyr Leu Phe Pro Tyr Tyr Arg Asp Met Leu Thr Val Leu
85      90      95
Ser Ala Gly Met Thr Pro Glu Glu Leu Ile Leu Asn Gly Ile Ser Lys
100     105     110
Ala Thr Asp Pro Gly Ser Ala Gly Arg His Met Ser Asn His Phe Ala
115     120     125
Lys Pro Glu Trp His Ile Glu Asn Ile Ser Ser Ala Thr Gly Thr His
130     135     140
Asp Leu His Ala Ala Gly Val Gly Arg Ala Met Val Tyr Tyr Gly His
145     150     155     160
Lys Gly Val Ala Ile Thr Ser His Gly Glu Ser Ala Thr Ser Glu Gly
165     170     175
Phe Val Tyr Glu Ala Ile Asn Gly Ala Ser Asn Glu Arg Leu Pro Val
180     185     190
Ile Phe Val Phe Gln Asp Asn Gly Tyr Gly Ile Ser Val Pro Lys Lys
195     200     205
Asp Gln Thr Ala Asn Arg Lys Val Ala Asp Asn Phe Ser Gly Phe Lys
210     215     220
Asn Leu Arg Ile Ile His Cys Asn Gly Lys Asp Val Phe Asp Ser Met
225     230     235     240
Asn Ala Met Thr Glu Ala Arg Glu Phe Ala Ile Ala Asn Arg Thr Pro
245     250     255
Val Ile Val His Ala Asn Cys Val Arg Ile Gly Ser His Ser Asn Ser
260     265     270
Asp Lys His Thr Leu Tyr Arg Asp Glu Asn Glu Leu Ala Tyr Val Lys
275     280     285
Glu Ala Asp Pro Leu Met Lys Phe Arg Arg Met Leu Leu Arg Tyr Lys
290     295     300
Arg Leu Thr Glu Glu Asp Leu Gln Gln Ile Glu Ala Ala Ala Lys Lys
305     310     315     320
Glu Leu Ala Ala Ala Asn Arg Lys Ala Leu Ala Ala Pro Asp Pro Ile
325     330     335
Pro Glu Ser Ile Tyr Asp Phe Val Leu Pro Glu Pro Tyr Ile Pro Gln
340     345     350
Lys Tyr Lys Asp Gly Leu Pro Gly Pro Val Glu Gly Glu Lys Ser Phe
355     360     365
Met Val Asn Ala Ile Asn Glu Thr Leu Lys Glu Glu Phe Arg Arg Asn
370     375     380
Pro Asp Thr Phe Ile Trp Gly Gln Asp Val Ala Asn Lys Asp Lys Gly
385     390     395     400
Gly Val Phe Asn Val Thr Lys Gly Met Gln Gln Glu Phe Gly Asp Ala
405     410     415
Arg Val Phe Ser Ala Pro Ile Ala Glu Asp Tyr Ile Val Gly Thr Ala
420     425     430
Asn Gly Met Cys Arg Phe Asp Pro Lys Ile His Val Val Ile Glu Gly
435     440     445
Ala Glu Phe Ala Asp Tyr Phe Trp Pro Ala Val Glu Gln Tyr Val Glu
450     455     460

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Cys Thr His Glu Tyr Trp Arg Ser Asn Gly Lys Phe Thr Pro Asn Ile
 465 470 475 480
 Thr Leu Arg Leu Ala Ser Gly Gly Tyr Ile Gly Gly Gly Leu Tyr His
 485 490 495
 Ser Gln Asn Leu Glu Gly Ala Leu Thr Leu Pro Gly Ala Arg Ile
 500 505 510
 Val Cys Pro Ser Phe Ala Asp Asp Ala Ala Gly Leu Leu Arg Thr Ser
 515 520 525
 Met Arg Ser Lys Gly Phe Thr Leu Tyr Leu Glu Pro Lys Ala Leu Tyr
 530 535 540
 Asn Ser Val Glu Ala Ala Ala Val Val Pro Glu Glu Phe Glu Val Pro
 545 550 555 560
 Phe Gly Lys Ala Arg Ile Arg Arg Glu Gly Thr Asp Leu Thr Ile Ile
 565 570 575
 Thr Tyr Gly Asn Thr Thr His Phe Cys Leu Asp Val Ala Glu Arg Leu
 580 585 590
 Ala Arg Glu Gly Val Gly Ser Val Glu Val Ile Asp Leu Arg Ser Leu
 595 600 605
 Ile Pro Leu Asp Lys Glu Ala Ile Phe Ala Ser Val Arg Lys Thr Gly
 610 615 620
 Lys Val Met Val Val His Glu Asp Lys Val Phe Ser Gly Phe Gly Ala
 625 630 635 640
 Glu Ile Ala Ala Gln Ile Ala Gly Glu Met Phe Arg Tyr Leu Asp Ala
 645 650 655
 Pro Val Gln Arg Val Gly Ser Thr Phe Thr Pro Val Gly Phe Asn Pro
 660 665 670
 Ile Leu Glu Arg Ala Ile Leu Pro Asn Asp Glu Lys Ile Tyr Lys Ala
 675 680 685
 Ala Lys Glu Leu Leu Glu Phe
 690 695

<210> 9640
 <211> 438
 <212> PRT
 <213> B.fragilis

<400> 9640

Tyr Leu Tyr Met Ser Phe Thr His Pro His Asn Gln Ser Asn Ser Val
 1 5 10 15
 Ser Ser Ser Gly Ala Lys Gly Lys Leu Arg Leu Ser Tyr Phe Leu Ala
 20 25 30
 Arg Arg Ile Tyr Arg Asp Thr Asp Gly Gly Lys Gln Val Ser Arg Pro
 35 40 45
 Ala Val Val Ile Ala Met Ile Gly Ile Ala Ile Gly Leu Ala Val Met
 50 55 60
 Ile Ile Ala Val Ser Val Val Ile Gly Phe Lys Ser Glu Val Arg Asn
 65 70 75 80
 Lys Val Ile Gly Phe Gly Ser His Ile Gln Ile Ser Asn Phe Asp Ala
 85 90 95
 Val Gly Ser Tyr Glu Thr His Pro Val Val Val Asn Asp Ser Met Met
 100 105 110
 Val Ala Leu Ser Ala Leu Pro Glu Val Lys His Val Gln Arg Tyr Ser
 115 120 125
 Thr Lys Pro Gly Met Ile Lys Thr Asp Asp Ala Phe Gln Gly Met Val
 130 135 140
 Leu Lys Gly Val Gly Pro Glu Phe Asp Pro Thr Phe Phe Arg Asp His
 145 150 155 160
 Leu Ile Glu Gly Glu Ile Pro Ala Phe Ser Asp Thr Ala Ser Thr Asn
 165 170 175

Gln Val Val Ile Ser Lys Ala Ile Ala Asp Arg Leu Lys Leu Lys Leu
 180 185 190
 Gly Asp Lys Ile Tyr Thr Tyr Phe Ile Gln Lys Asp Val Arg Ala Arg
 195 200 205
 Arg Leu Thr Val Lys Gly Ile Tyr Gln Thr Asn Phe Ser Glu Tyr Asp
 210 215 220
 Asn Leu Phe Leu Leu Thr Asp Leu Tyr Leu Val Asn Arg Leu Asn Asn
 225 230 235 240
 Trp Ala Pro Gly Gln Val Ser Gly Ala Glu Leu Gln Val Arg Asp Tyr
 245 250 255
 Asp Lys Leu Glu Asp Ile Thr Tyr Arg Ile Ala Thr Asp Thr Asp Asn
 260 265 270
 Lys Gln Asp Ile Tyr Gly Gly Thr Tyr Tyr Val Gln Ser Ile Glu Gln
 275 280 285
 Met Asn Pro Gln Ile Phe Ala Trp Leu Asp Leu Leu Asp Leu Asn Val
 290 295 300
 Trp Val Ile Leu Ile Leu Met Val Gly Val Ala Gly Phe Thr Met Ile
 305 310 315 320
 Ser Gly Leu Leu Ile Ile Ile Leu Glu Arg Thr Gln Met Ile Gly Ile
 325 330 335
 Leu Lys Ala Leu Gly Ala Asn Asp Phe Thr Ile Arg Lys Val Phe Leu
 340 345 350
 Trp Phe Ser Val Phe Leu Ile Gly Lys Gly Met Leu Trp Gly Asn Ala
 355 360 365
 Ile Gly Ile Val Phe Cys Ile Leu Gln Ser Gln Phe Gly Leu Phe Lys
 370 375 380
 Leu Asp Pro Glu Thr Tyr Tyr Val Ser Met Val Pro Val Ser Met Asn
 385 390 395 400
 Ile Trp Leu Phe Leu Leu Ile Asn Ala Gly Thr Leu Leu Thr Ser Val
 405 410 415
 Leu Met Leu Val Gly Pro Ser Tyr Leu Ile Thr Lys Ile Asn Pro Ala
 420 425 430
 Asp Ser Met Arg Tyr Glu
 435

<210> 9641

<211> 415

<212> PRT

<213> B.fragilis

<400> 9641

Asn Asp Asn Ile Met Thr Ile Asn Leu Ile Thr Phe Ala Ser Ile Leu
 1 5 10 15
 His Lys Gln Val Thr Ile Arg Ser Ser His Glu Ala Val Leu Ser Glu
 20 25 30
 Leu Glu Lys Tyr Phe Thr Val Lys Phe Val Asp Tyr Arg Asp Ile His
 35 40 45
 Gln Leu Thr Lys Asp Asp Phe Ser Ile Ile Phe Ile Ala Thr Gly Gly
 50 55 60
 Val Glu Arg Leu Val Met Gln Cys Phe Glu Ser Leu Pro Arg Pro Ala
 65 70 75 80
 Ile Ile Leu Ala Asp Gly Met Gln Asn Ser Leu Ala Ala Ala Leu Glu
 85 90 95
 Ile Ser Ser Trp Leu Arg Gly Arg Gly Met Lys Ser Glu Ile Leu His
 100 105 110
 Gly Asp Phe Met Ser Ile Val Gln Arg Ile Gln Val Leu Tyr Thr Asn
 115 120 125
 Phe Lys Ala Gln Arg Ser Leu Val Gly Leu Arg Ile Gly Val Ile Gly
 130 135 140

Thr Pro Ser Ser Trp Leu Ile Ala Ser Asn Val Asp Tyr Leu Leu Ala
 145 150 155 160
 Lys Arg Arg Trp Gly Ile Glu Tyr Leu Asp Ile Pro Leu Glu Arg Ile
 165 170 175
 Tyr Asp Val Tyr Asp Arg Ile Lys Asp Asn Glu Val Gly Ala Ser Cys
 180 185 190
 Ala Ala Val Ala Ser Gln Ala Leu Ala Cys Arg Glu Gly Thr Pro Glu
 195 200 205
 Asp Met Ile Lys Ala Met Arg Leu Tyr Arg Ala Ile Lys Arg Ile Cys
 210 215 220
 Lys Glu Glu Lys Leu Ser Ala Val Thr Val Ser Cys Phe Lys Leu Ile
 225 230 235 240
 Glu Arg Thr Gly Thr Thr Gly Cys Leu Ala Leu Ala Met Leu Asn Asp
 245 250 255
 Glu Gly Ile Ile Ala Gly Cys Glu Gly Asp Leu Gln Ser Val Phe Thr
 260 265 270
 Leu Leu Val Ala Lys Ala Leu Thr Gly Lys Val Gly Phe Met Ala Asn
 275 280 285
 Pro Ser Met Ile Asn Ala Arg Asn Asn Glu Ile Ile Leu Ala His Cys
 290 295 300
 Thr Ile Gly Met Lys Gln Thr Glu Arg Tyr Ile Ile Arg Asn His Phe
 305 310 315 320
 Glu Thr Glu Ser Gly Ile Gly Ile Gln Gly Leu Leu Pro Glu Gly Asp
 325 330 335
 Val Thr Ile Val Lys Cys Gly Gly Glu Cys Leu Asp Glu Tyr Tyr Leu
 340 345 350
 Ser Thr Gly Thr Leu Thr Glu Asn Thr Asn Tyr Ile Asn Met Cys Arg
 355 360 365
 Thr Gln Val Arg Val Lys Met Asn Thr Pro Ala Asp Tyr Phe Leu Lys
 370 375 380
 Asn Pro Leu Gly Asn His His Ile Leu Leu Gln Gly Asn Tyr Glu Asn
 385 390 395 400
 Ser Leu Asn Glu Phe Leu Met Ala Asn Ser Cys Lys Arg Thr Glu
 405 410 415

<210> 9642

<211> 503

<212> PRT

<213> B.fragilis

<400> 9642

Lys Gln Thr Ile Met Thr Leu Ile Leu Ala Ile Val Pro Val Leu Leu
 1 5 10 15
 Leu Ile Val Leu Met Ala Phe Phe Lys Met Pro Gly Asp Lys Ser Ser
 20 25 30
 Val Ile Ser Leu Ile Val Thr Ile Leu Ile Ala Leu Phe Gly Phe His
 35 40 45
 Tyr Ala Val Asp Asn Leu Val Phe Ser Phe Val Tyr Gly Ala Leu Lys
 50 55 60
 Ala Val Ser Pro Ile Leu Ile Ile Ile Leu Met Ala Ile Phe Ser Tyr
 65 70 75 80
 Asn Val Leu Leu Lys Thr Glu Lys Met Glu Ile Ile Lys Gln Gln Phe
 85 90 95
 Ser Ser Ile Ser Thr Asp Lys Ser Ile Gln Val Leu Leu Leu Thr Trp
 100 105 110
 Gly Phe Gly Gly Leu Leu Glu Ala Met Ala Gly Phe Gly Thr Ala Val
 115 120 125
 Ala Ile Pro Ala Ala Ile Leu Ile Ser Leu Gly Phe Lys Pro Ile Phe
 130 135 140

Ser Ala Thr Val Ser Leu Ile Ala Asn Ser Val Ala Thr Ala Phe Gly
 145 150 155 160
 Ala Ile Gly Thr Pro Val Leu Val Leu Ala Lys Glu Thr Asn Leu Asp
 165 170 175
 Val Gln Val Leu Ser Thr Asn Val Val Leu Gln Leu Ser Val Leu Met
 180 185 190
 Phe Leu Ile Pro Leu Val Leu Leu Phe Leu Thr Asp Pro Lys Ile Lys
 195 200 205
 Ser Leu Pro Lys Asn Leu Phe Leu Ala Leu Leu Val Gly Ala Val Ser
 210 215 220
 Leu Gly Ser Gln Tyr Val Ala Ala Arg Tyr Met Gly Ala Glu Ser Pro
 225 230 235 240
 Ala Ile Ile Gly Ser Ile Leu Ser Ile Val Val Ile Val Ile Tyr Gly
 245 250 255
 Lys Leu Thr Ala Pro Lys Lys Glu Lys Ala Gln Gln Asn Ala Leu Lys
 260 265 270
 Gly Lys Asp Ile Leu Asn Ala Trp Ser Ile Tyr Leu Leu Ile Leu Leu
 275 280 285
 Leu Ile Ile Leu Thr Ser Pro Leu Phe Pro Gly Leu Arg Ser Thr Leu
 290 295 300
 Glu Asn Asn Trp Val Thr Arg Ile Ser Leu Pro Ile Asn Asp Ser Thr
 305 310 315 320
 Val Asn Tyr Thr Ile Ala Trp Leu Thr His Ala Gly Val Leu Leu Phe
 325 330 335
 Val Gly Thr Phe Val Gly Gly Leu Ile Gln Gly Ala Lys Val Lys Glu
 340 345 350
 Leu Phe Val Val Leu Trp Asn Thr Val Lys Gln Leu Lys Lys Thr Phe
 355 360 365
 Val Thr Val Ile Cys Leu Val Gly Leu Ser Thr Ile Met Asp Thr Ala
 370 375 380
 Gly Met Ile Ser Val Ile Ala Thr Ala Leu Ala Thr Ala Thr Gly Ser
 385 390 395 400
 Leu Tyr Pro Leu Phe Ala Pro Val Ile Gly Cys Leu Gly Thr Phe Ile
 405 410 415
 Thr Gly Ser Asp Thr Ser Ser Asn Ile Leu Phe Gly Lys Leu Gln Ala
 420 425 430
 Ser Val Ala Gly His Ile Asn Val Ser Pro Asp Trp Leu Ser Ala Ala
 435 440 445
 Asn Thr Val Gly Ala Thr Gly Lys Ile Ile Ser Pro Gln Ser Ile
 450 455 460
 Ala Ile Ala Thr Ser Ala Gly Asn Gln Gln Gly Lys Glu Gly Glu Ile
 465 470 475 480
 Leu Lys Ala Ala Ile Pro Tyr Ala Leu Ala Tyr Val Val Ile Thr Gly
 485 490 495
 Ile Ile Val Tyr Ile Phe Ser
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<210> 9643

<211> 480

<212> PRT

<213> B.fragilis

<400> 9643

Ile Val Arg Met Asn Lys Asn Thr Ile Leu Tyr Ala Ile Leu Ala Ile
 1 5 10 15
 Leu Tyr Phe Met Leu Phe Ser Cys Ser Gln Glu Glu Leu Ile Leu Pro
 20 25 30
 Asp Pro Thr Pro Leu Asp Ala Tyr Lys Arg Gln Ser Thr Gln Leu Gly
 35 40 45

Ile	Asp	Arg	Glu	Lys	Ile	Asn	Ile	Asn	Thr	Glu	Asp	Ala	Ser	Ile	Val
50						55					60				
Ala	Glu	Ile	Phe	Asn	Arg	Lys	Asn	His	His	Leu	Thr	Arg	Asn	Ser	Leu
65						70					75				80
Asn	Glu	Pro	Thr	Lys	Arg	Ile	Lys	Glu	Ile	Phe	Thr	Leu	Tyr	Asn	Asn
				85					90					95	
Gly	Lys	Pro	Met	Tyr	Ile	Ile	Asn	Tyr	Gln	Asp	Gln	Lys	Gly	Tyr	
			100				105					110			
Thr	Ile	Ile	Ser	Ala	Thr	Lys	Lys	Tyr	Tyr	Pro	Val	Ile	Ala	Tyr	Ser
		115					120					125			
Asp	Val	Gly	Ser	Phe	Ser	Leu	Gln	Glu	Ser	Tyr	Asn	Asp	Gly	Ser	Ser
	130					135					140				
Ile	Leu	Leu	Asp	Glu	Tyr	Lys	Lys	Ile	Met	Gln	Tyr	Asn	Glu	Ile	Gln
145						150				155					160
Pro	Asp	Ser	Ile	Ile	Asp	Lys	Tyr	Arg	Lys	Lys	Trp	Val	Glu	Phe	Glu
				165					170					175	
Asn	Leu	Lys	Thr	Glu	Lys	Leu	Ser	Asp	Val	Ser	Thr	Arg	Ser	Leu	Ser
		180						185					190		
Asp	Tyr	Ala	Met	Ser	Ile	Lys	Lys	Glu	Glu	Gln	Lys	Lys	Ile	Trp	Thr
	195					200						205			
Asn	Lys	Gly	Tyr	Glu	Cys	His	Asp	Leu	Gly	Ala	Ile	Arg	Asn	Phe	Leu
	210					215					220				
Ser	Lys	Glu	Arg	Ala	Asp	Gly	Tyr	Ile	Arg	Asp	Ile	Cys	Asn	His	Thr
225					230					235					240
Asp	Gln	Asn	Tyr	Asn	Cys	Glu	Lys	Val	Asn	Leu	Leu	Leu	Ile	Lys	Lys
				245					250					255	
Tyr	Pro	Ile	Lys	Thr	Ile	Gly	Pro	Leu	Leu	Lys	Thr	Ser	Trp	His	Gln
		260						265					270		
Arg	Ser	Pro	Phe	Asn	Val	Asp	Ala	Pro	Asn	Lys	Leu	Ala	Gly	Cys	Val
	275						280					285			
Pro	Ile	Ala	Ile	Ala	Gln	Ile	Ala	Lys	Tyr	Tyr	Glu	Trp	Pro	Val	Thr
	290					295					300				
Tyr	Ser	Trp	Thr	His	Ile	Pro	Leu	Arg	Cys	Asn	Thr	Asn	Met	Glu	Asp
305					310					315					320
Asp	Glu	Phe	Phe	Lys	Lys	Phe	Ile	Lys	Asp	Ile	Arg	Ser	Phe	Ser	Lys
				325					330					335	
Val	Thr	Tyr	Lys	Asp	Lys	Ala	Thr	Gly	Ala	Thr	Met	Gly	Asn	Ala	Val
		340						345					350		
Lys	Ala	Phe	Lys	Lys	Leu	Asn	Tyr	Ser	Ala	Thr	Leu	Met	Asp	Tyr	Lys
	355						360					365			
Arg	Ser	Glu	Thr	Ile	Gln	Glu	Ile	Gln	Asn	Asn	Arg	Pro	Val	Phe	Met
	370					375					380				
Gly	Gly	Asp	Arg	Lys	Ala	Ile	Phe	Phe	Asp	Ile	Ile	Thr	Lys	Gly	His
385					390					395					400
Ala	Trp	Val	Cys	Asp	Gly	Tyr	Glu	Val	Arg	Gln	Thr	Gln	Tyr	Ala	Ser
				405					410					415	
Leu	Val	Trp	Gly	Ser	Lys	Phe	Asn	Ile	Pro	Asp	Met	Glu	Glu	Pro	Asp
		420						425					430		
Tyr	Phe	Phe	Thr	Asn	Gly	Thr	Tyr	Asp	Thr	Ser	Glu	Phe	Leu	His	Met
	435						440					445			
Asn	Trp	Gly	Trp	Gly	Glu	Asn	Gly	Gly	Asn	Gly	Trp	Tyr	Ile	Phe	Asp
	450					455					460				
Asn	Ile	Tyr	Asn	Arg	Thr	His	Asp	Val	Ser	Tyr	His	Leu	Asn	Arg	Pro
465					470					475					480

<210> 9644

<211> 281

<212> PRT

<213> B.fragilis

<400> 9644

Thr	Tyr	Arg	Ile	Ala	Thr	Gln	Arg	Leu	Asn	Gly	Ser	Glu	Thr	Phe	Ser
1				5					10					15	
Asp	Ser	Phe	Gly	Pro	Ile	Asn	Ile	Tyr	Asn	Glu	Lys	His	Thr	Arg	Tyr
		20						25					30		
Met	Lys	Arg	Ile	Ser	Leu	Phe	Val	Leu	Phe	Ile	Cys	Thr	Ile	Phe	Ser
		35					40					45			
Cys	Leu	Ser	Ala	Gln	Thr	Asp	Lys	Glu	Asn	Glu	Arg	Ile	Lys	Gln	Asn
	50					55					60				
Tyr	Ile	Arg	Ser	Ile	Ile	Gly	Met	Asp	Glu	Glu	Lys	Gln	Pro	Tyr	Leu
65					70					75					80
Gln	Leu	Leu	Ser	Lys	Ile	Pro	Pro	Glu	Lys	Glu	Val	Ser	Asp	Gln	Asn
				85					90					95	
Val	Ile	Glu	Leu	Gln	Gln	Leu	Tyr	Pro	Ile	Arg	Gln	Glu	Glu	Ile	His
			100					105						110	
Arg	Leu	Ile	Ser	Thr	Ile	Arg	Gly	Asp	Gly	Ser	Trp	Pro	Asp	Ile	Asn
		115					120					125			
Tyr	Ala	Asp	Thr	Lys	Arg	Ser	Gly	Trp	Glu	Pro	Lys	Gln	His	Thr	Glu
	130					135					140				
Arg	Ile	Leu	Lys	Leu	Thr	Lys	Tyr	Tyr	Ala	Ser	Glu	Gln	Glu	Asn	Val
145					150					155					160
Ser	Ala	Gln	Glu	Ile	Ser	Ala	Val	Val	Ser	Ile	Ile	His	Gln	Ala	Met
				165						170				175	
Lys	Tyr	Trp	Phe	Val	Gln	Lys	Pro	Val	Cys	Lys	Asn	Trp	Trp	Tyr	Asn
			180					185						190	
Gln	Ile	Gly	Ile	Pro	Arg	Thr	Leu	Gly	Pro	Ala	Phe	Leu	Leu	Phe	Glu
		195					200					205			
Thr	Glu	Met	Thr	Glu	Lys	Glu	Lys	Gln	Glu	Ala	Ile	Arg	Val	Met	Glu
	210					215					220				
Gln	Ser	Gln	Phe	Gly	Met	Thr	Gly	Gln	Asn	Lys	Val	Trp	Leu	Ala	Gly
225					230					235					240
Asn	Val	Leu	Ile	Arg	Gly	Leu	Leu	Leu	Asn	Asp	Ala	Glu	Leu	Ile	Lys
				245					250					255	
Glu	Ala	Arg	Glu	Asn	Ile	Cys	Ser	Glu	Ile	Val	Leu	Gly	Gln	Lys	Glu
			260					265					270		
Gly	Ile	Gln	Pro	Asp	Trp	Ser	Phe	His							
		275					280								

<210> 9645

<211> 425

<212> PRT

<213> B.fragilis

<400> 9645

Thr	Gln	Thr	Ile	Gln	Thr	Leu	Thr	Pro	Met	Ile	Phe	Ser	Gln	Arg	Ile
1				5					10					15	
Tyr	Phe	Ile	Ile	Leu	Phe	His	Val	Leu	Leu	Ile	Leu	Gly	Thr	Ala	Gly
		20						25					30		
Thr	Gly	Leu	Trp	Leu	Val	Val	Ser	His	Thr	Gly	Tyr	Ile	Ile	Gly	Gly
		35					40					45			
Ile	Leu	Leu	Leu	Cys	Ser	Leu	Phe	Gln	Ile	Gly	Ala	Leu	Thr	Arg	Gln
	50					55					60				
Leu	Asn	Thr	Phe	Asn	Arg	Lys	Ile	Arg	Leu	Phe	Phe	Asp	Ala	Val	Gln
65					70					75					80
Asp	Lys	Asp	Asn	Met	Leu	Tyr	Phe	Pro	Glu	Ala	Asn	Val	Gly	Lys	Glu
				85					90					95	
Gln	Ala	Gln	Leu	Asn	Arg	Ser	Leu	Asn	Arg	Leu	Asn	Asp	Leu	Leu	Ala
			100					105					110		

Arg Thr Lys Gly Glu Ser His Lys Gln Glu His Phe Tyr Gln Ser Leu
 115 120 125
 Leu Glu Glu Val Pro Ser Gly Val Leu Ala Trp Asp Asp Ser Gly Arg
 130 135 140
 Ile Ile Ile Ala Asn Ser Ala Ala Phe Ser Leu Leu Lys Cys Asn Arg
 145 150 155 160
 Leu Tyr Thr Glu Thr Gln Leu Ala Gln Leu Leu Asn Val Thr Gly Ile
 165 170 175
 Arg Lys Ser Leu Ser Ile Ser Glu Lys Lys Met Ile Leu Asp Gly Glu
 180 185 190
 Thr Ile Thr Ile Leu Ser Ile Lys Asp Ile Gly Asp Glu Leu Ser Asp
 195 200 205
 Lys Glu Asn Glu Ser Trp Ser Lys Leu Thr His Val Leu Thr His Glu
 210 215 220
 Ile Met Asn Thr Ile Ala Pro Ile Leu Ser Leu Ser Gln Thr Leu Ser
 225 230 235 240
 Glu Arg Pro Asp Ile Asn Glu Lys Ser Ala Arg Gly Leu Arg Ile Ile
 245 250 255
 Gln Ala Gln Ser Glu Arg Leu Met Glu Phe Thr Glu Ser Phe Arg His
 260 265 270
 Leu Ser Tyr Leu Pro His Pro Glu Lys Arg Arg Phe Ala Leu Thr Glu
 275 280 285
 Met Leu Arg Asn Leu Glu Glu Leu Leu Gln Ser Asp Phe Arg Glu Arg
 290 295 300
 Gly Ile Arg Phe Met Leu Gln Cys Val Pro Asp Pro Ile Glu Thr Asp
 305 310 315 320
 Gly Asp Pro Asn Gln Leu Ser Gln Val Phe Leu Asn Leu Leu Lys Asn
 325 330 335
 Ala Met Gln Ala Leu Glu Gly Gln Ala Asp Gly Arg Ile Ile Leu Arg
 340 345 350
 Val Arg Arg Ala Asp Arg Leu Gln Val Glu Ile Glu Asp Asn Gly Pro
 355 360 365
 Gly Ile Pro Glu Glu Ile Arg Glu Gln Ile Phe Ile Pro Phe Phe Thr
 370 375 380
 Thr Lys Thr Glu Gly Ser Gly Ile Gly Leu Ser Leu Cys Lys Gln Ile
 385 390 395 400
 Ile Arg Gln His Asp Gly His Leu Ser Ile Arg Glu Ser Arg Pro Gly
 405 410 415
 Gln Thr Ile Phe Ser Leu Asp Leu Pro
 420 425

<210> 9646

<211> 434

<212> PRT

<213> B.fragilis

<400> 9646

Lys Glu Ala Phe Ser Ser Leu Leu Cys Arg Arg Thr Glu Lys Arg Pro
 1 5 10 15
 Phe Leu Phe Gln Ile Gln Pro Leu Val Ile Ser Lys Gln Phe Ile Pro
 20 25 30
 Gly Asn Asn His Pro Val Ala Arg Phe Gln Ser Phe Gly His Phe Val
 35 40 45
 Val Leu Arg Ile Leu Pro Pro Asp Thr Asp Arg Thr Ala Arg Gly Lys
 50 55 60
 Phe Thr Thr Phe Val Lys Asn Ile His Pro Ala Ala Pro Gly Tyr Leu
 65 70 75 80
 Lys Glu Ser Ser Thr Arg Tyr Lys Asn Gly Leu Gly Arg Ile Ser Gln
 85 90 95

Leu Lys Ile Asp Val Ile Arg Leu Pro Gly Thr Asp Val Phe Gly Thr
 100 105 110
 Ser Gly Ser Lys Leu Lys Val Gly Thr Glu Leu Ser Leu Phe Tyr Phe
 115 120 125
 Arg Ile Gly Phe Gly His Phe Lys Phe Ile Val Ala Ser Val Thr Gly
 130 135 140
 Glu Ile Arg Arg Lys Ser Gly Asn Tyr Pro Leu His Val Val Phe Val
 145 150 155 160
 Asp Gln Ser Leu Tyr Phe Glu Val Gly Gly Asn Asp Leu Pro Asp Met
 165 170 175
 Phe Ala Gly Ser Asn Gly Leu Ala Asp Leu Gly Ile Glu Ile Thr His
 180 185 190
 Leu Ser Ile Asp Gly Ser Phe Tyr Leu Gln Val Phe His Pro Leu Ala
 195 200 205
 Tyr Gln Gly Glu Ala Ala Leu His Val Thr Asp Ile Leu Val Glu Ala
 210 215 220
 Ala Asp Leu Ala Phe Pro Glu Lys Ile Val Leu Pro Asp Ala Phe Val
 225 230 235 240
 Asn Asp Phe Gln Leu Cys Pro Cys Arg Phe Val Leu Phe Gly Ser Gln
 245 250 255
 Ala Lys Leu Leu Leu Arg Tyr Gln Leu Leu Phe Asp Lys Ala Ala Val
 260 265 270
 Leu Leu Val Thr Pro Leu Phe His Cys Gln Phe Leu Ile Gln Ala Asp
 275 280 285
 Ala Phe Leu Phe Gln Pro Gln Met Phe Leu Leu His Ala Asp Ala Gly
 290 295 300
 Ile Ala Gln Leu Val Leu Leu Ile Gly Gln Ile Gly Phe Ala Leu His
 305 310 315 320
 Asp Ala Asp Val Gln Glu Arg Ile Ala Glu Thr Lys Asn His Ile Ala
 325 330 335
 Cys Leu Asp Asp Gly Ser Phe Leu Phe Gln Ala Leu Phe His Thr Ala
 340 345 350
 Ser Phe Tyr Arg Ile His Ile Asn Asp Ala Val Gly His His Leu Ser
 355 360 365
 Asp Asn Pro Asp Val Ile Thr Glu Leu Ser Pro Gly Asn Cys Ser Asn
 370 375 380
 Gly Gln Pro Val Phe Phe His Ile His Arg Arg Gly Ser Val Ser Glu
 385 390 395 400
 Asn Lys Val Lys Asn Lys Ser His Gln Tyr His Gly Ser Gly Asp Gly
 405 410 415
 Ile Ile Met Leu Pro Leu His Ser Gly Phe Ala Phe Asp His Cys Ile
 420 425 430
 His Arg

<210> 9647

<211> 456

<212> PRT

<213> B.fragilis

<400> 9647

Ile Glu Val Phe Ser Met Ser Phe Asn Ile Val Lys Asn Asp Lys Lys
 1 5 10 15
 Arg Val Ile Ile Val Gly Gly Gly Phe Gly Gly Leu Lys Leu Ala Asn
 20 25 30
 Lys Leu Lys Lys Ser Gly Phe Gln Val Val Leu Val Asp Lys Asn Asn
 35 40 45
 Tyr His Gln Phe Pro Pro Leu Ile Tyr Gln Val Ala Ser Ala Gly Leu
 50 55 60

Glu	Pro	Ser	Ser	Ile	Ser	Phe	Pro	Phe	Arg	Lys	Ile	Phe	Gln	Lys	Arg
65					70					75					80
Lys	Asp	Phe	Tyr	Phe	Arg	Met	Ala	Glu	Val	Arg	Ala	Ile	Phe	Pro	Glu
				85					90					95	
Lys	Lys	Met	Ile	Gln	Thr	Ser	Ile	Gly	Lys	Ala	Glu	Tyr	Asp	Tyr	Leu
			100					105					110		
Val	Leu	Ala	Ala	Gly	Thr	Thr	Ser	Asn	Phe	Phe	Gly	Asn	Glu	His	Ile
			115					120				125			
Glu	Glu	Glu	Ala	Met	Pro	Met	Lys	Thr	Val	Ser	Glu	Ala	Met	Gly	Leu
			130				135					140			
Arg	Asn	Ala	Leu	Leu	Ala	Asn	Phe	Glu	Arg	Ser	Ile	Thr	Cys	Ser	Thr
145					150					155					160
Glu	Arg	Glu	Arg	Gln	Glu	Leu	Leu	Asn	Val	Val	Val	Val	Gly	Gly	Gly
				165					170					175	
Ala	Thr	Gly	Val	Glu	Ile	Ala	Gly	Val	Leu	Ser	Glu	Met	Lys	Lys	Phe
			180					185					190		
Val	Leu	Pro	Asn	Asp	Tyr	Pro	Asp	Met	Pro	Ser	Ser	Leu	Met	His	Ile
		195					200					205			
Tyr	Leu	Ile	Glu	Ala	Gly	Asp	Arg	Leu	Leu	Ala	Gly	Met	Ser	Glu	Asp
	210				215						220				
Ser	Ser	Arg	His	Ala	Glu	Gln	Phe	Leu	Arg	Glu	Met	Gly	Val	Asn	Ile
225					230					235					240
Leu	Leu	Asn	Lys	Arg	Val	Thr	Asp	Tyr	Lys	Asp	His	Lys	Val	Met	Leu
			245						250					255	
Glu	Asp	Gly	Thr	Glu	Ile	Ala	Thr	Arg	Thr	Phe	Ile	Trp	Val	Ser	Gly
			260					265					270		
Val	Ala	Ala	Ile	Thr	Phe	Gly	Asn	Ile	Asp	Gly	Glu	Leu	Leu	Gly	Arg
			275				280					285			
Gly	Arg	Arg	Ile	Lys	Val	Asp	Glu	Phe	Asn	Arg	Val	Gln	Gly	Thr	Asp
	290					295					300				
Thr	Ile	Phe	Ala	Ile	Gly	Asp	Gln	Cys	Ile	Gln	Thr	Thr	Asp	Lys	Asn
305					310					315					320
Tyr	Pro	Asn	Gly	His	Pro	Gln	Leu	Ala	Gln	Val	Ala	Ile	Gln	Gln	Gly
			325						330					335	
Glu	Leu	Leu	Ala	Lys	Asn	Leu	Gln	Arg	Leu	Gln	Lys	Gly	Lys	Pro	Met
			340					345					350		
Gln	Pro	Phe	His	Tyr	Arg	Asn	Leu	Gly	Ser	Met	Ala	Thr	Val	Gly	Arg
		355					360					365			
Asn	Arg	Ala	Val	Ala	Glu	Phe	Ser	Ser	Phe	Lys	Thr	Ala	Gly	Trp	Leu
			370				375					380			
Ala	Trp	Val	Met	Trp	Leu	Val	Val	His	Leu	Arg	Ser	Ile	Leu	Gly	Val
385					390					395					400
Arg	Asn	Lys	Ala	Asn	Val	Leu	Leu	Asn	Trp	Val	Trp	Asn	Tyr	Phe	Thr
			405						410					415	
Tyr	Asp	Gln	Ser	Leu	Arg	Met	Ile	Val	Tyr	Ala	Lys	Lys	Ala	Lys	Glu
			420					425					430		
Val	Arg	Asp	Arg	Glu	Glu	Leu	Glu	Ala	Lys	Thr	His	Trp	Gly	Glu	Glu
		435					440					445			
Thr	Gln	Thr	Gln	Gln	Pro	Lys	Gly								
	450					455									

<210> 9648

<211> 344

<212> PRT

<213> B.fragilis

<400> 9648

Trp	Ile	Cys	Leu	Leu	Gln	Thr	Pro	Leu	Ile	Arg	Ser	Ser	Lys	Pro	Asp
1				5					10					15	

Lys Lys Leu Glu Leu Pro Tyr Tyr Ala Ala Ser Gln Pro Ser Gly Met
 20 25 30
 Gln Val Val Arg Ser Ser Gly Leu Asn Gly Pro Ser Thr Lys Glu Ser
 35 40 45
 Phe Pro Asp His Ala Phe Ile Pro Val Ala Leu Leu Ser Pro Arg Gln
 50 55 60
 Glu Gly His Gly Asp Phe Arg Ala Val Tyr Asp Glu Pro Arg Pro Phe
 65 70 75 80
 Asp Cys Cys Gly Leu Thr His Thr Glu Lys Met Gly Ala Ala Ile Ile
 85 90 95
 Ala Asp Gly Ile Asp Ala Val Thr Val Ala Ala Arg Asn Asn Leu Gly
 100 105 110
 Leu Gly Ala Ser Gln Ile Lys Leu Met Thr Gly Gly Gly Val Ala Ser
 115 120 125
 Trp Tyr Asp Arg Leu Glu Asp Ser Gln Phe Phe Glu Lys Glu Ile His
 130 135 140
 Ala Ala Val Lys Ala Gly Lys Asp Ala Gly Thr Tyr Val Met Val His
 145 150 155 160
 Val Tyr Val Pro Arg Ala Ile Gln Arg Ala Ile His Ala Gly Val Lys
 165 170 175
 Ser Ile Glu His Gly His Leu Ile Asp Glu Pro Thr Met Gln Leu Ile
 180 185 190
 Ala Glu Lys Glu Ile Trp Leu Ser Met Gln Pro Phe Thr Leu Gly Asp
 195 200 205
 Asn Gln Phe Pro Thr Lys Glu Gln Gln Glu Lys His Ala Leu Val Val
 210 215 220
 Gln Gly Thr Asp Gln Thr Tyr Gln Leu Ala Lys Lys Tyr Asn Val Lys
 225 230 235 240
 Leu Ala Trp Gly Thr Asp Leu Leu Phe Asn Pro Ala Asn Thr Lys Asn
 245 250 255
 Gln Asn Gln Gly Ile Leu Lys Leu Arg Gln Trp Phe Ser Asn Phe Glu
 260 265 270
 Ile Leu Lys Met Val Thr His Asp Asn Ala Glu Leu Leu Ala Leu Ser
 275 280 285
 Gly Ala Arg Asn Pro Tyr Pro Gly Lys Leu Gly Val Ile Glu Glu Asp
 290 295 300
 Ala Trp Ala Asp Leu Ile Leu Val Asp Gly Asp Val Leu Lys Asp Ile
 305 310 315 320
 Thr Leu Leu Gly Asp Pro Glu Lys Asn Phe Ile Ile Ile Met Lys Gly
 325 330 335
 Gly Glu Ile Tyr Lys Asn Arg Val
 340

<210> 9649

<211> 395

<212> PRT

<213> B.fragilis

<400> 9649

Asn Glu Pro Leu Lys Lys Ile Met Met Lys Thr Lys Met Ile Tyr Met
 1 5 10 15
 Ile Leu Leu Phe Ser Ser Ile Leu Phe Gly Gly Cys Val Arg Asp Val
 20 25 30
 Ile Asp Asp Val Pro Gly Thr Asp Glu Asp Tyr Ala Ala Asp Lys Lys
 35 40 45
 Asp Val Val Leu Ile Arg Met Gly Thr Asn Asp Ala Glu Val Lys Asp
 50 55 60
 Ile Thr Ser Arg Leu Phe Asn Asn Ile Pro Ser Ser Trp Glu Ile Gly
 65 70 75 80

Lys Lys Thr Ile Val Asp Tyr Asp Lys Met Lys Asp Pro Glu Thr Glu
 85 90 95
 Leu Asn Ala Asp Ile Lys Asn Pro Lys Ile Tyr Met Thr Val Ile Leu
 100 105 110
 Asn Ile Asp Asp Val Ile Ser Gly Lys Tyr Pro Ile Ser Leu Phe Arg
 115 120 125
 Met Leu Lys Phe Tyr Lys Arg Asp Phe Tyr Val Ile Ala Thr Gln Ser
 130 135 140
 Thr Pro Glu Gln Lys Glu Glu Met Leu Ser Leu Ile Gly Val Tyr Met
 145 150 155 160
 Glu Ala Gly Tyr Tyr Ala Ile Asn Tyr Asp Asn Val Gln His Tyr Arg
 165 170 175
 Ile Phe Pro Ser Ala Asp Pro Tyr Ala Lys Asp Asn Met Ile Gly Lys
 180 185 190
 Gly Val Ala Ser Phe Asn Gln Lys Leu Leu Thr Arg Ser Ala Asp Thr
 195 200 205
 Leu Pro Glu Gly Asn Asp Pro Asp Pro Gly Tyr Asn Ala Gln Met Ala
 210 215 220
 Asp Lys Glu Ala Leu Lys Arg Ile Glu Ile Tyr Asn Arg Ile Tyr Gly
 225 230 235 240
 Tyr Ala Gln Gly Asp Met Asn Tyr Ser Met Gln Ala Val Pro Tyr Lys
 245 250 255
 Met Lys Gln Gly Ala Ala Pro Asp Val Ile Ile Asp Asn Ser Trp Ala
 260 265 270
 Ile Asp Ala Tyr Asn Phe Gln Ile Tyr Ser Lys Asn Asn Asn Cys Ile
 275 280 285
 Leu Ser Ile Thr Asn Asn Ala Gly Asn Gly Phe Thr Ala Asn Ile Lys
 290 295 300
 Asp Tyr Thr Thr Pro Lys Gly Ala Asn Val Tyr Ala Tyr Ile Trp Asn
 305 310 315 320
 Leu Met Arg Glu Ala Ser Ser Glu Ile Thr Val His Ser Asp Gly Gly
 325 330 335
 Ile Phe Arg Glu Ile Ser Tyr Gln Pro Gln Thr Val Asn His Gly Ala
 340 345 350
 Ser Tyr Thr Glu Asn Ser Phe Trp Lys Val Ser Val Ser Val Ser Pro
 355 360 365
 Thr Lys Leu Glu Asp Lys Pro Trp Glu Ala Phe Lys Val Ser Phe Gly
 370 375 380
 Lys Glu Ser Ser Thr Glu Val Ser Tyr Lys Asp
 385 390 395

<210> 9650

<211> 390

<212> PRT

<213> B.fragilis

<400> 9650

Met Glu Ala Phe Thr Phe Asn Thr Thr Glu Leu Ile Leu Leu Ser Ala
 1 5 10 15
 Thr Gly Val Leu Leu Ile Ile Gln Leu Ile Tyr Tyr Leu Gly Leu Tyr
 20 25 30
 Asn Arg Ile His Thr His Asn Leu Ala Val Gly Lys Asp Glu Val His
 35 40 45
 Phe Gly Arg Glu Leu Pro Pro Leu Ser Val Val Ile Cys Ala Arg Asn
 50 55 60
 Glu Ser Glu Asn Leu Arg Arg Asn Leu Pro Thr Ile Leu Lys Gln Asp
 65 70 75 80
 Tyr Pro Asp Phe Glu Val Ile Val Ile Asn Asp Gly Ser Thr Asp Glu
 85 90 95

Ser Glu Asp Leu Leu Ser Ala Leu Glu Glu Glu Tyr Pro Asn Leu Tyr
 100 105 110
 His Ser Phe Thr Pro Asp Ser Ala Arg Tyr Ile Ser Arg Lys Lys Leu
 115 120 125
 Ala Leu Thr Leu Gly Ile Lys Ala Ser Lys His Asp Trp Leu Val Phe
 130 135 140
 Thr Glu Ala Asp Cys Ala Pro Val Ser Asn Gln Trp Leu Arg Arg Met
 145 150 155 160
 Ala Arg Asn Phe Thr Ser Ser Thr Asp Ile Val Leu Gly Tyr Ser Gly
 165 170 175
 Tyr Glu Arg Gly Lys Gly Trp Leu His Lys Arg Ala Ser Phe Asp Ser
 180 185 190
 Leu Phe Thr Ser Leu Arg Tyr Leu Gly Phe Ala Leu Ala Gly Lys Pro
 195 200 205
 Tyr Met Gly Ile Gly Arg Asn Leu Ala Tyr Arg Lys Glu Leu Phe Phe
 210 215 220
 Lys Val Lys Gly Phe Ser Thr His Leu Asn Met Gln Arg Gly Glu Asp
 225 230 235 240
 Asp Leu Phe Ile Asn Gln Val Ala Asn Glu Asn Asn Thr Arg Val Glu
 245 250 255
 Thr Ser Pro Asp Ala Val Ile Arg Met Gln Pro Val Glu Arg Tyr Lys
 260 265 270
 Asp Trp Lys Glu Glu Lys Val Ser Tyr Met Ala Thr Ser Arg Phe Tyr
 275 280 285
 Lys Gly Ser Gln Arg Trp Leu Leu Gly Leu Glu Thr Gly Thr Arg Leu
 290 295 300
 Leu Phe Tyr Ala Ala Cys Leu Ala Gly Ile Val Phe Gly Ile Leu Ser
 305 310 315 320
 Phe His Trp Leu Val Val Gly Leu Ser Leu Leu Leu Trp Phe Val Arg
 325 330 335
 Tyr Ser Val Gln Ala Tyr Val Ile Asn Lys Thr Ala Gly Glu Met Gly
 340 345 350
 Asp Asn Arg Ser Tyr Tyr Phe Thr Leu Pro Val Phe Asp Ile Ile Arg
 355 360 365
 Pro Leu Gln Thr Leu Lys Leu Lys Leu Tyr Arg Leu Tyr Arg Gly Lys
 370 375 380
 Gly Asp Phe Met Arg Arg
 385 390

<210> 9651

<211> 345

<212> PRT

<213> B.fragilis

<400> 9651

Ser Val Leu Phe Ser Ser Glu Arg Asn Lys Thr Phe Lys Thr Lys Arg
 1 5 10 15
 Lys Met Ala Gln Leu Asn Phe Gly Gly Val Thr Glu Asn Val Val Thr
 20 25 30
 Arg Glu Glu Phe Pro Leu Glu Lys Ala Arg Glu Val Leu Lys Asn Glu
 35 40 45
 Thr Ile Ala Val Ile Gly Tyr Gly Val Gln Gly Pro Gly Gln Ser Leu
 50 55 60
 Asn Leu Arg Asp Asn Gly Phe Asn Val Ile Val Gly Gln Arg Pro Gly
 65 70 75 80
 Lys Thr Tyr Glu Lys Ala Val Ala Asp Gly Trp Val Pro Gly Glu Thr
 85 90 95
 Leu Phe Gly Ile Glu Glu Ala Cys Glu Lys Gly Thr Ile Ile Met Cys
 100 105 110

Leu Leu Ser Asp Ala Ala Val Met Ser Val Trp Pro Thr Ile Lys Pro
 115 120 125
 Tyr Leu Thr Ala Gly Lys Ala Leu Tyr Phe Ser His Gly Phe Ala Ile
 130 135 140
 Thr Trp Ser Asp Arg Thr Gly Val Val Pro Gln Lys Asp Ile Asp Val
 145 150 155 160
 Ile Met Val Ala Pro Lys Gly Ser Gly Thr Ser Leu Arg Thr Met Phe
 165 170 175
 Leu Glu Gly Arg Gly Leu Asn Ser Ser Tyr Ala Ile Tyr Gln Asp Ala
 180 185 190
 Thr Gly Arg Ala Met Glu Arg Thr Ile Ala Leu Gly Ile Gly Val Gly
 195 200 205
 Ser Gly Tyr Leu Phe Glu Thr Thr Phe Val Arg Glu Ala Thr Ser Asp
 210 215 220
 Leu Thr Gly Glu Arg Gly Ser Leu Met Gly Ala Ile Gln Gly Leu Leu
 225 230 235 240
 Leu Ala Gln Tyr Glu Val Leu Arg Glu Asn Gly His Thr Pro Ser Glu
 245 250 255
 Ala Phe Asn Glu Thr Val Glu Glu Leu Thr Gln Ser Leu Met Pro Leu
 260 265 270
 Phe Ala Lys Asn Gly Met Asp Trp Met Tyr Ala Asn Cys Ser Thr Thr
 275 280 285
 Ala Gln Arg Gly Ala Leu Asp Trp Met Gly Pro Phe His Asp Ala Ile
 290 295 300
 Lys Pro Val Val Gln Lys Leu Tyr Asn Ser Val Lys Thr Gly Asn Glu
 305 310 315 320
 Ala Gln Ile Ser Ile Asp Ser Asn Ser Lys Pro Asp Tyr Arg Glu Lys
 325 330 335
 Leu Glu Ala Glu Leu Lys Gly Ile Ala
 340 345

<210> 9652

<211> 644

<212> PRT

<213> B.fragilis

<400> 9652

Phe Leu Ala Tyr Asn Leu Gln Pro Ile Lys Met Asn Asp Asn Lys Ile
 1 5 10 15
 Lys Ser Ser Ser Pro Leu Ser Asp Leu Gln His Gln Gln Leu Leu Leu
 20 25 30
 Arg Met Glu Tyr Glu Tyr Glu Lys Glu Glu Phe Arg Arg Gln Thr Glu
 35 40 45
 Thr Met Gly Ile Ala Arg Lys Val Lys Arg Gly Leu Cys Trp Tyr Pro
 50 55 60
 Val Gly Thr Gly Arg Ser Phe Tyr Asn Ser Leu Asn Gln Leu Val Ile
 65 70 75 80
 Glu Ile Glu Arg Lys Glu Asp Lys Asp Ile Glu His Val Phe Glu Phe
 85 90 95
 Gly Arg Pro Val Cys Phe Phe Glu Gln Gly Tyr Asp Gly Lys Ile His
 100 105 110
 Tyr Phe Asn Ser Ile Cys Thr Val Ser Tyr Ala Asp Glu Glu Arg Met
 115 120 125
 Val Val Ala Val Pro Gly Ala Gly Ser Leu Leu Glu Ile Gln Gly Ala
 130 135 140
 Glu Arg Leu Gly Val Gln Leu Tyr Phe Asp Glu Thr Ser Tyr Arg Thr
 145 150 155 160
 Met Phe Glu Ala Leu Glu Asp Val Ile Arg Ala Lys Gly Asn Arg Leu
 165 170 175

Ala Glu Leu Arg Asp Ile Leu Leu Ser Lys Gln Pro Ser Cys Trp Arg
 180 185 190
 Glu Thr Tyr Pro Val Arg Phe Pro Trp Leu Asn Ser Thr Gln Glu Ala
 195 200 205
 Ala Val Asn Lys Val Leu Cys Ala Lys Asp Val Ala Ile Val His Gly
 210 215 220
 Pro Pro Gly Thr Gly Lys Thr Thr Thr Leu Val Glu Ala Ile Tyr Glu
 225 230 235 240
 Thr Leu His Arg Glu Asn Gln Val Leu Val Cys Ala Gln Ser Asn Thr
 245 250 255
 Ala Val Asp Trp Ile Ala Glu Lys Leu Val Asp Arg Gly Val Pro Val
 260 265 270
 Leu Arg Ile Gly Asn Pro Ser Arg Val Asn Asp Lys Met Leu Ser Phe
 275 280 285
 Thr Tyr Glu Arg Arg Phe Glu Gly His Pro Ala Tyr Thr Glu Leu Trp
 290 295 300
 Gly Ile Arg Lys Ser Ile Arg Glu Met Gly Asn Arg Met Arg Lys Ser
 305 310 315 320
 Ser Tyr Ser Glu Arg Glu Ala Ala Arg Ser Arg Ile Asn His Leu Arg
 325 330 335
 Glu Arg Ala Thr Glu Leu Glu Ile Gln Ile Asn Glu Asp Leu Phe Ser
 340 345 350
 Gly Ala Arg Val Ile Ala Ser Thr Leu Val Ser Ser Asn His Arg Ile
 355 360 365
 Leu Thr Gly Arg Arg Phe Thr Thr Leu Phe Ile Asp Glu Ala Ala Gln
 370 375 380
 Ala Leu Glu Ala Ala Cys Trp Ile Ala Ile Arg Lys Ala Asp Arg Val
 385 390 395 400
 Ile Phe Ala Gly Asp His Cys Gln Leu Pro Pro Thr Ile Lys Cys Ile
 405 410 415
 Glu Ala Gly Arg Asn Gly Leu Glu Gln Thr Leu Met Glu Lys Val Ala
 420 425 430
 Ala Asn Lys Gln Glu Thr Val Ser Leu Leu Lys Val Gln Tyr Arg Met
 435 440 445
 His Gln Ser Ile Met Gln Phe Ser Ser Glu Trp Phe Tyr Gln Gly Glu
 450 455 460
 Leu Gln Ala Ala Pro Glu Val Thr Asn Arg Gly Ile Leu Asp Leu Asp
 465 470 475 480
 Leu Pro Met Ser Trp Ile Asp Thr Ser Glu Met Glu Phe His Glu Glu
 485 490 495
 Phe Ile Gly Glu Ser Phe Gly Arg Ile Asn Lys Pro Glu Ala Asn Leu
 500 505 510
 Leu Leu Gln Glu Leu Glu Ala Tyr Ile Arg Lys Ile Gly Glu Lys Arg
 515 520 525
 Val Leu Glu Glu Arg Ile Asp Phe Gly Leu Ile Ser Pro Tyr Lys Ala
 530 535 540
 Gln Val Gln Tyr Leu Arg Gly Lys Leu Lys Gly Cys Ser Phe Phe Arg
 545 550 555 560
 Pro Phe Arg Ser Gln Ile Thr Ile His Thr Val Asp Gly Phe Gln Gly
 565 570 575
 Gln Glu Arg Asp Val Ile Phe Ile Ser Leu Val Arg Ala Asn Glu Asp
 580 585 590
 Gly Gln Ile Gly Phe Leu Asn Asp Leu Arg Arg Met Asn Val Ala Ile
 595 600 605
 Thr Arg Ala Arg Met Lys Leu Val Ile Leu Gly Asp Ala Val Thr Met
 610 615 620
 Ser Lys His Ala Phe Tyr Lys Lys Leu Ile Gly Tyr Ile Arg His Ile
 625 630 635 640
 Ser Gln Gly Leu

<210> 9653
 <211> 658
 <212> PRT
 <213> B.fragilis

<400> 9653

Ile	Lys	Phe	Asn	Ile	Tyr	Leu	Cys	Ala	Leu	Ile	Lys	Gln	Gln	Thr	Ile
1			5						10					15	
Leu	Tyr	His	Met	Lys	Asn	Arg	Ile	Tyr	Thr	Met	Lys	Gly	Met	Leu	Ala
			20					25				30			
Thr	Leu	Leu	Gly	Ala	Phe	Leu	Leu	Gly	Tyr	Ala	Val	Thr	Gly	Cys	Ile
		35				40					45				
Asp	Glu	Lys	Asp	His	Tyr	Lys	Pro	Asp	Asp	Lys	Thr	Ser	Gly	Val	Pro
	50					55				60					
Asn	Ser	Phe	Asp	Phe	Ala	Thr	Thr	Gln	Asp	Val	Gln	Leu	Asp	Leu	Lys
65					70				75					80	
Tyr	Asp	Val	Pro	Val	Lys	Asp	Tyr	Gln	Val	Leu	Phe	Glu	Leu	Tyr	Phe
			85					90						95	
Glu	Asn	Pro	Leu	Thr	Thr	Asp	Ala	Glu	Gly	Gln	Val	Val	Lys	Arg	Thr
			100					105						110	
Asp	Ile	Thr	Pro	Lys	Val	Thr	Arg	Met	Thr	Asp	Gly	Thr	Gly	Lys	Tyr
	115					120						125			
Arg	Ala	Lys	Glu	Thr	Val	Pro	Ala	Tyr	Gly	Glu	Glu	Val	Tyr	Ile	Tyr
	130					135						140			
Thr	Ser	Tyr	Ile	Gly	Val	Pro	Met	Leu	Tyr	Lys	Thr	Lys	Ile	Val	Gly
145					150					155				160	
Asn	Thr	Ile	Thr	Ala	Asp	Ile	Asn	Trp	Asp	Thr	Ala	Ala	Glu	Glu	Ser
				165				170						175	
Val	Gln	Thr	Arg	Ala	Glu	Gly	Glu	Tyr	Gln	Thr	Val	Pro	Gln	Gly	Phe
			180					185					190		
Tyr	Thr	Leu	Gly	Ser	Trp	Asn	Val	Lys	Gly	Arg	Pro	Asn	Tyr	Leu	Asp
	195					200					205				
Ser	Glu	Gly	Val	Ile	Glu	Leu	Thr	Ser	Ser	Phe	Tyr	Gln	Thr	Ile	Asn
	210					215					220				
Gln	Thr	Ile	Pro	Glu	Gly	Asn	Cys	Pro	Arg	Lys	Tyr	Arg	Gln	Ser	
225				230					235					240	
Ala	Asp	Ile	Val	Ile	Asn	Asp	Glu	Leu	Gly	Ala	Glu	Val	Lys	Val	Arg
				245					250					255	
Phe	Val	Gly	Gly	Thr	Ser	Ala	Ala	Tyr	Ser	Ala	Phe	Gly	Tyr	Tyr	Cys
		260						265					270		
Tyr	Pro	Glu	Gly	Ala	Ala	Lys	Lys	Gln	Ile	Glu	Asn	Ala	Arg	Lys	Tyr
		275					280					285			
Val	Val	Phe	Pro	Asn	Thr	Lys	Thr	Gly	Val	Gly	Ile	Lys	Gly	Gly	Glu
	290					295					300				
Cys	Val	Lys	Leu	His	Tyr	Ile	Asp	Glu	Asn	Gly	Glu	Asp	Gln	Gly	Thr
305					310					315				320	
Thr	Phe	Pro	Lys	Gly	Thr	Lys	Ile	Gly	Trp	Phe	Ile	Ser	Asn	Asp	Ala
			325						330					335	
Phe	Thr	Lys	Lys	Gly	Glu	Lys	Thr	Gly	Ser	Val	Gly	Lys	Gly	Leu	Gly
		340						345					350		
Met	Phe	Tyr	Ser	Thr	Thr	Ala	Leu	Asn	Ser	Asp	Gly	Arg	Thr	His	Thr
		355					360					365			
Ala	Ala	Phe	Lys	Ile	Asn	Asp	Phe	Ile	Val	Leu	Ser	Phe	Glu	Asp	Trp
	370					375					380				
Thr	Asp	Gln	Asp	Tyr	Asn	Asp	Val	Met	Phe	Asn	Ile	Trp	Ser	Asn	Pro
385					390					395				400	
Ile	Glu	Ala	Ile	Ala	Pro	Asp	Val	Pro	Ser	Val	Asp	Pro	Ile	Asp	Pro

118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

405 410 415
 Asp Asp Ala Ser Val Ala Tyr Arg Met Thr Tyr Lys Gly Ile Leu Ala
 420 425 430
 Phe Glu Asp Asn Trp Pro Ser Lys Gly Asp Tyr Asp Leu Asn Asp Val
 435 440 445
 Ile Val Lys Tyr Ser Ser Ile Leu Glu Phe Asn Thr Lys Asn Gln Val
 450 455 460
 Leu Ser Ala Glu Asp Thr Phe Thr Ala Met Trp Ser Gly Ala Leu Phe
 465 470 475 480
 Lys Asn Gly Phe Ala Tyr Gln Leu Asn Thr Asp Arg Ser Asn Val Glu
 485 490 495
 Cys Ser Ile Leu Glu Gly Lys Ser Gly Trp Asp Lys Gln Gly Leu Asp
 500 505 510
 Lys Asp Leu Glu Gln Ala Thr Ile Ser Val Phe Ala Asn Ala Ile Glu
 515 520 525
 Glu Thr Gly Glu Asn Thr Lys Thr Ser Thr Phe Lys Ile Gln Asn Lys
 530 535 540
 Phe Lys Gln Pro Val Asp His Glu Thr Phe Gly Val Ala Pro Tyr Asn
 545 550 555 560
 Pro Phe Ile Phe Leu His Gln Asn Thr Asp Lys Asn Arg Thr Glu Val
 565 570 575
 His Leu Val Asn His Gly Pro Thr Ser Lys Glu Asn Met Asn Leu Phe
 580 585 590
 Asn Thr Gln Gln Asp Leu Ser Asp Lys Asp Lys Gly Ile Tyr Tyr Val
 595 600 605
 Ser Asp Gln Asn Tyr Pro Phe Ala Ile His Leu Ser Asp Val Glu Ser
 610 615 620
 Phe Ser Thr Thr Glu Lys Glu Ala Ile Asp Lys Ser Tyr Pro Arg Phe
 625 630 635 640
 Ala Ser Trp Ala Gln Ser Gly Gly Thr Thr Asp Lys Asp Trp Tyr Leu
 645 650 655
 Lys Lys

<210> 9654

<211> 198

<212> PRT

<213> B.fragilis

<400> 9654

Asn Val Ile Lys Met Lys Lys Ile Val Phe Leu Leu Leu Leu Cys Val
 1 5 10 15
 Ala Cys Cys Met Asn Ala Gln Glu Phe His Leu Ile Pro Lys Val Gly
 20 25 30
 Leu Asn Leu Ala Asn Thr Thr Gly Glu Val Asp Ser Lys Val Arg Pro
 35 40 45
 Gly Leu Asn Ile Gly Leu Gly Gly Asp Val Met Leu Thr Glu Arg Phe
 50 55 60
 Gly Ile Glu Thr Gly Val Tyr Tyr Ser Met Gln Gly Ser Lys Tyr Lys
 65 70 75 80
 Gly Gly Gly Val Ser Tyr Thr Asp Lys Leu Asp Tyr Ile Asn Val Pro
 85 90 95
 Val Tyr Ala Lys Glu Phe Ile Tyr Lys Gly Leu Tyr Val Phe Gly Gly
 100 105 110
 Pro Gln Phe Ser Phe Asn Val Asn Ser Glu Asn Lys Ser Ser Ser Asp
 115 120 125
 Tyr Gly Thr Thr Val Ile Gly Met Asn Val Ile Arg Lys Phe Asp Cys
 130 135 140
 Gly Val Gly Leu Gly Ala Gly Tyr Gln Phe Glu Arg Gly Leu Leu Ile

145 150 155 160
 Ser Leu Asn Tyr Asn Ile Gly Leu Ile Asn Val Asn Lys Ser Trp Ala
 165 170 175
 Ser Asp Ser Asn Pro Lys Ala Asn Asn Ser Val Val Gln Leu Asn Val
 180 185 190
 Gly Trp Arg Phe Ala Leu
 195

<210> 9655
 <211> 247
 <212> PRT
 <213> B.fragilis

<400> 9655
 Met Ser Asn Asn Lys Lys Ile Gly Ser Tyr Lys Phe Ile Ala Glu Pro
 1 5 10 15
 Phe His Val Asp Phe Asn Gly Arg Leu Thr Met Gly Val Leu Gly Asn
 20 25 30
 His Leu Leu Asn Cys Ala Gly Phe His Ala Ser Glu Arg Gly Phe Gly
 35 40 45
 Ile Ala Thr Leu Asn Glu Asp Asn Tyr Thr Trp Val Leu Ser Arg Leu
 50 55 60
 Ala Ile Asp Leu Glu Glu Met Pro Tyr Gln Tyr Glu Glu Phe Thr Val
 65 70 75 80
 Gln Thr Trp Val Glu Asn Val Tyr Arg Leu Phe Thr Asp Arg Asn Phe
 85 90 95
 Ala Ile Ile Asp Lys Asp Gly Lys Lys Ile Gly Tyr Ala Arg Ser Val
 100 105 110
 Trp Ala Met Ile Asn Leu Asn Thr Arg Lys Pro Ala Asp Leu Leu Thr
 115 120 125
 Leu His Gly Gly Ser Ile Val Asp Tyr Val Cys Asp Glu Pro Cys Pro
 130 135 140
 Ile Glu Lys Pro Ser Arg Ile Lys Val Ala Thr Asp Gln Pro Cys Ala
 145 150 155 160
 Lys Leu Thr Ala Lys Tyr Ser Asp Ile Asp Ile Asn Gly His Val Asn
 165 170 175
 Ser Ile Arg Tyr Ile Glu His Ile Leu Asp Leu Phe Pro Ile Asp Leu
 180 185 190
 Tyr Lys Ser Lys Arg Ile Gln Arg Phe Glu Met Ala Tyr Val Ala Glu
 195 200 205
 Ser Tyr Tyr Gly Asp Glu Leu Ser Phe Phe Glu Glu Glu Val Ser Glu
 210 215 220
 Asn Glu Tyr His Val Glu Ile Lys Lys Asn Gly Ser Glu Val Val Cys
 225 230 235 240
 Arg Ala Lys Val Lys Phe Val
 245

<210> 9656
 <211> 790
 <212> PRT
 <213> B.fragilis

<400> 9656
 Leu Leu Thr Lys Phe Pro Ala Lys Ile Thr Ile Leu Phe Pro Gly Trp
 1 5 10 15
 Asn Lys His Phe Asn Leu Leu Asn Leu Ser Phe Ile Leu Leu Val Ile
 20 25 30
 Ile Asn Arg Arg Thr Asp Lys Thr Glu Ile Val Met Val Tyr Asp Leu
 35 40 45

Asn	Met	Leu	Lys	Ser	Phe	Tyr	Ala	Ser	Tyr	Lys	Gly	Lys	Met	Glu	His
50						55					60				
Val	Arg	Ala	Ala	Leu	Lys	Arg	Pro	Leu	Thr	Leu	Ala	Glu	Lys	Ile	Leu
65					70					75					80
Tyr	Thr	His	Leu	Tyr	Asn	Val	Ala	Asp	Leu	Lys	Asn	Tyr	Glu	Arg	Gly
				85					90					95	
Glu	Asp	Tyr	Val	Asn	Phe	Arg	Pro	Asp	Arg	Val	Ala	Met	Gln	Asp	Ala
			100					105					110		
Thr	Ala	Gln	Met	Ala	Leu	Leu	Gln	Phe	Met	Asn	Ala	Gly	Lys	Glu	Ala
		115					120					125			
Val	Ala	Val	Pro	Ser	Thr	Val	His	Cys	Asp	His	Leu	Ile	Gln	Ala	Tyr
	130					135					140				
Arg	Gly	Ala	Glu	Arg	Asp	Ile	Glu	Thr	Ala	Thr	Gln	Thr	Asn	Arg	Glu
145					150					155					160
Val	Tyr	Asp	Phe	Leu	Arg	Asp	Val	Ser	Ser	Arg	Tyr	Gly	Ile	Gly	Phe
				165					170					175	
Trp	Lys	Pro	Gly	Ala	Gly	Ile	Ile	His	Gln	Val	Val	Leu	Glu	Asn	Tyr
			180					185					190		
Ala	Phe	Pro	Gly	Gly	Met	Met	Val	Gly	Thr	Asp	Ser	His	Thr	Pro	Asn
		195					200					205			
Ala	Gly	Gly	Leu	Gly	Met	Val	Ala	Ile	Gly	Val	Gly	Gly	Ala	Asp	Ala
	210					215					220				
Val	Asp	Val	Met	Thr	Gly	Met	Glu	Trp	Glu	Leu	Lys	Met	Pro	Lys	Leu
225					230					235					240
Ile	Gly	Val	Arg	Leu	Thr	Gly	Glu	Leu	Asn	Gly	Trp	Thr	Ala	Pro	Lys
				245					250					255	
Asp	Val	Ile	Leu	Lys	Leu	Ala	Gly	Ile	Leu	Thr	Val	Lys	Gly	Gly	Thr
			260					265					270		
Asn	Ala	Ile	Ile	Glu	Tyr	Phe	Gly	Pro	Gly	Thr	Ala	Ser	Leu	Ser	Ala
		275					280					285			
Thr	Gly	Lys	Ala	Thr	Ile	Cys	Asn	Met	Gly	Ala	Glu	Val	Gly	Ala	Thr
	290					295					300				
Thr	Ser	Leu	Phe	Pro	Tyr	Asp	Glu	Arg	Met	Ala	Val	Tyr	Leu	Lys	Ala
305					310					315					320
Thr	Gly	Arg	Glu	Glu	Val	Ala	Ala	Met	Ala	Asp	Ser	Val	Ala	Ala	Asp
				325					330					335	
Leu	Arg	Ala	Asp	Asp	Glu	Val	Met	Ala	Arg	Pro	Gly	Asp	Phe	Tyr	Asp
			340					345					350		
Arg	Val	Ile	Glu	Ile	Asn	Leu	Ser	Glu	Leu	Glu	Pro	Tyr	Ile	Asn	Gly
		355					360					365			
Pro	Phe	Thr	Pro	Asp	Ala	Ala	Thr	Pro	Ile	Ser	Glu	Phe	Ala	Glu	Lys
	370					375					380				
Val	Val	Thr	Asn	Gly	Tyr	Pro	Arg	Lys	Met	Glu	Val	Gly	Leu	Ile	Gly
385					390					395					400
Ser	Cys	Thr	Asn	Ser	Ser	Tyr	Gln	Asp	Ile	Ser	Arg	Ala	Ala	Ser	Val
				405					410					415	
Ala	Arg	Gln	Val	Asn	Glu	Lys	Asn	Leu	Gly	Val	Ala	Ala	Pro	Leu	Ile
			420					425					430		
Val	Asn	Pro	Gly	Ser	Glu	Gln	Ile	Arg	Ala	Thr	Ala	Glu	Arg	Asp	Gly
	435						440					445			
Met	Met	Asp	Val	Phe	Glu	Lys	Met	Gly	Ala	Thr	Ile	Met	Ala	Asn	Ala
	450					455					460				
Cys	Gly	Pro	Cys	Ile	Gly	Gln	Trp	Lys	Arg	His	Thr	Asp	Asp	Pro	Thr
465					470					475					480
Arg	Lys	Asn	Ser	Ile	Val	Thr	Ser	Phe	Asn	Arg	Asn	Phe	Ala	Lys	Arg
				485					490					495	
Ala	Asp	Gly	Asn	Pro	Asn	Thr	Phe	Ala	Phe	Val	Ala	Ser	Pro	Glu	Ile
			500					505					510		
Val	Leu	Ala	Leu	Thr	Ile	Ala	Gly	Asp	Leu	Cys	Phe	Asn	Pro	Leu	Lys

515	520	525
Asp Arg Leu Val Asn His	Asp Gly Glu Lys Val Lys	Leu Ser Glu Pro
530	535	540
Gln Gly Asp Glu Leu Pro	Ser Ala Gly Phe Val Ala Gly	Asn Gln Gly
545	550	555
Tyr Gln Ala Pro Gly Glu Lys	Asn Glu Ile Arg Val Ala Pro	Asp
565	570	575
Ser Gln Arg Leu Gln Leu Leu Thr	Pro Phe Pro Ala Trp Asp Gly	Asn
580	585	590
Asp Phe Leu Asn Met Pro Leu Leu Ile Lys	Ala Gln Gly Lys Cys Thr	
595	600	605
Thr Asp His Ile Ser Met Ala Gly Pro Trp	Leu Arg Phe Arg Gly His	
610	615	620
Leu Glu Asn Ile Ser Asp Asn Met Leu Met	Gly Ala Val Asn Ala Phe	
625	630	635
Asn Gly Glu Thr Asn Lys Val Trp Asn Arg	Leu Thr Asn Thr Tyr Glu	
645	650	655
Thr Val Ser Gly Thr Ala Lys Gln Tyr Lys	Ala Asp Gly Ile Ser Ser	
660	665	670
Ile Val Val Ala Glu Glu Asn Tyr Gly Glu	Gly Ser Ser Arg Glu His	
675	680	685
Ala Ala Met Glu Pro Arg Phe Leu His Val	Lys Val Ile Leu Ala Lys	
690	695	700
Ser Phe Ala Arg Ile His Glu Thr Asn Leu	Lys Lys Gln Gly Met Leu	
705	710	715
Ala Val Thr Phe Ala Asp Lys Ala Asp Tyr	Asp Arg Ile Arg Glu His	
725	730	735
Asp Leu Ile Ser Val Val Gly Leu Lys Glu	Phe Ser Pro Gly Arg Asn	
740	745	750
Leu Glu Val Ile Leu His His Glu Asp Gly	Thr Glu Glu Arg Phe Val	
755	760	765
Val Gln His Thr Tyr Asn Glu Gln Gln Ile	Gly Trp Phe Arg Ala Gly	
770	775	780
Ser Ala Leu Asn Ala Lys		
785	790	

<210> 9657

<211> 153

<212> PRT

<213> B.fragilis

<400> 9657

Arg Arg Leu Asn Val Ser Ala Ser Ser Ile Lys Gly Val His Lys Tyr	
1 5 10 15	
Thr Ile Thr Ala Trp Thr Asp Lys Asp Thr Ile Glu Lys Val Val Lys	
20 25 30	
Gln Ile Glu Lys Lys Ile Asp Val Leu Gln Ala His Tyr Phe Thr Glu	
35 40 45	
Asp Glu Ile Tyr Phe His Glu Ile Ala Leu Tyr Lys Val Ser Met Pro	
50 55 60	
Glu Phe Gln Ser Gln Pro Glu Ala Ser Lys Val Ile Arg Arg Tyr Asn	
65 70 75 80	
Ala Arg Ile Val Glu Val Asn Pro Val Phe Ala Ile Val Glu Lys Asn	
85 90 95	
Gly Ile Ser Glu Glu Ile Thr Ser Leu Tyr Glu Glu Leu Ser Ala Leu	
100 105 110	
Asn Cys Val Leu Gln Phe Val Arg Ser Gly Arg Val Ala Ile Thr Thr	
115 120 125	
Ser Cys Phe Glu Arg Val Asn Glu Phe Leu Ala Asp Arg Glu Thr Lys	

130 135 140
 Tyr Asn Leu Ser Lys Lys Glu Glu Lys
 145 150

<210> 9658
 <211> 303
 <212> PRT
 <213> B.fragilis

<400> 9658

Met Ser Lys Ile Thr Lys Gln Gln Asn Gly Val Leu Ser Val Pro Asp
 1 5 10 15
 Val Pro Thr Ile Pro Phe Ile Thr Gly Asp Gly Val Gly Ala Glu Ile
 20 25 30
 Thr Pro Ala Met Gln Ala Ile Val Asp Ala Ala Val Asp Met Ser Tyr
 35 40 45
 Gly Gly Ala Arg Arg Ile Glu Trp Lys Glu Val Leu Ala Gly Glu Arg
 50 55 60
 Ala Phe Arg Ala Thr Gly Ser Trp Leu Pro Asp Glu Thr Met Glu Val
 65 70 75 80
 Phe Lys Glu Tyr Leu Ile Gly Ile Lys Gly Pro Leu Thr Thr Pro Val
 85 90 95
 Gly Gly Gly Ile Arg Ser Leu Asn Val Ala Leu Arg Gln Thr Leu Asp
 100 105 110
 Leu Tyr Val Cys Leu Arg Pro Val Arg Trp Phe Arg Gly Val Val Ser
 115 120 125
 Pro Val Lys Glu Pro Glu Lys Val Asn Met Tyr Ile Phe Arg Glu Asn
 130 135 140
 Thr Glu Asp Ile Tyr Ala Gly Ile Glu Trp Glu Ala Gly Thr Pro Glu
 145 150 155 160
 Ala Lys Lys Phe Tyr Arg Phe Leu His Glu Glu Met Gly Val Ser Lys
 165 170 175
 Val Arg Phe Pro Glu Thr Ser Ser Phe Gly Val Lys Pro Val Ser Arg
 180 185 190
 Glu Gly Thr Glu Arg Leu Val Arg Ala Ala Cys Arg Tyr Ala Leu Gln
 195 200 205
 His Glu Leu Pro Ser Val Thr Leu Val His Lys Gly Asn Ile Met Lys
 210 215 220
 Phe Thr Glu Gly Gly Phe Lys Lys Trp Gly Tyr Glu Leu Ala Glu Arg
 225 230 235 240
 Glu Phe Ala Asp Ala Leu Ala Ser Gly Lys Leu Val Ile Lys Asp Cys
 245 250 255
 Ile Ala Asp Ala Phe Leu Gln Asn Thr Leu Leu Ile Pro Glu Glu Tyr
 260 265 270
 Ser Val Ile Ala Thr Leu Asn Leu Asn Val Phe Thr Thr Gly Leu Glu
 275 280 285
 Gly Ser Ala Gly Gly Val Lys Lys Asp Pro Thr Arg Trp Cys Tyr
 290 295 300

<210> 9659
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 9659

Leu Leu Leu Pro Leu His Thr Ile Cys Lys Glu Met Lys Asp Thr Lys
 1 5 10 15
 Gln Gln Phe Glu His Val Ile Ala Leu Cys Arg Asp Leu Phe Ser Lys
 20 25 30

Lys Leu His Asp Tyr Gly Pro Ala Trp Arg Ile Leu Arg Pro Ala Ser
 35 40 45
 Val Thr Asp Gln Ile Phe Ile Lys Ala Asn Arg Ile Arg Ser Ile Glu
 50 55 60
 Val Lys Gly Val Thr Leu Val Asp Glu Gly Ile Arg Ser Glu Phe Ile
 65 70 75 80
 Ala Ile Val Asn Tyr Gly Ile Val Gly Leu Ile Gln Leu Glu Leu Gly
 85 90 95
 Tyr Ala Glu Ser Ala Asp Ile Thr Val Glu Glu Ala Leu Ala Leu Tyr
 100 105 110
 Asp Lys His Ala Lys Glu Ala Leu Glu Leu Met Leu Ala Lys Asn His
 115 120 125
 Asp Tyr Asp Glu Ala Trp Arg Ser Met Arg Ile Ser Ser Tyr Thr Asp
 130 135 140
 Leu Ile Leu Met Lys Ile Tyr Arg Thr Lys Gln Ile Glu Ser Leu Ala
 145 150 155 160
 Gly Gln Thr Leu Val Ser Glu Gly Ile Asp Ala Asn Tyr Met Asp Met
 165 170 175
 Ile Asn Tyr Ser Val Phe Gly Leu Ile Lys Ile Glu Phe Glu Gly
 180 185 190

<210> 9660

<211> 123

<212> PRT

<213> B.fragilis

<400> 9660

Thr Leu Tyr Thr Gly Arg Gly Lys Pro Pro Ser Pro Ile Glu Arg Pro
 1 5 10 15
 Pro Arg Leu Asn Val Pro Tyr Pro Pro Thr Pro Asp Phe Ala Pro Val
 20 25 30
 Lys Glu Leu Pro Ser Leu Leu Pro Ser Thr Pro Ser Pro Glu Val Ala
 35 40 45
 Val Pro Leu Leu Pro Pro Ile Cys Glu Pro Leu Pro Lys Ala Pro Ala
 50 55 60
 Thr Arg Leu Leu Ala Ala Ser Ala Ala Ala Leu Arg Ser Arg Ser Ala
 65 70 75 80
 Phe Ser Ser Ala Ser Phe Leu Ala Ser Ala Ala Phe Ser Ser Gly Val
 85 90 95
 Phe Ser Gly Phe Phe Ala Thr Phe Gly Phe Ser Phe Leu Gly Ser Ala
 100 105 110
 Leu Gly Phe Thr Thr Thr Val Ser Ser Ser Val
 115 120

<210> 9661

<211> 299

<212> PRT

<213> B.fragilis

<400> 9661

Ile Glu Leu Thr Arg Arg Met Asn Phe Asn Cys Ile Lys Thr Val Met
 1 5 10 15
 Ile Ala Ala Ala Ala Met Ile Ser Leu Asn Ser Phe Ser Gln Asp Leu
 20 25 30
 Ile Ala Arg Gln Ala Pro Ile Asp Arg Lys Leu Lys Ser Val Asp Ser
 35 40 45
 Leu Ala Leu Gln Lys Gln Ile Arg Ala Glu Gln Ser Glu Tyr Pro Ala
 50 55 60
 Leu Ser Leu Tyr Pro Asn Trp Asn Asn Gln Tyr Val His Ala Tyr Gly

65					70					75				80
Lys	Asp	Ala	Ile	Ile	Pro	Asp	Ser	Tyr	Thr	Ile	Asp	Leu	Thr	Gly Phe
				85					90					95
His	Met	Pro	Thr	Pro	Ser	Thr	Arg	Ile	Thr	Ser	Pro	Phe	Gly	Pro Arg
			100					105					110	
Trp	Arg	Arg	Met	His	Asn	Gly	Leu	Asp	Ile	Lys	Val	Asn	Ile	Gly Asp
		115					120					125		
Thr	Ile	Val	Ala	Ala	Phe	Asp	Gly	Lys	Val	Arg	Ile	Val	Lys	Tyr Glu
	130					135					140			
Arg	Arg	Gly	Tyr	Gly	Lys	Tyr	Val	Val	Ile	Arg	His	Asp	Asn	Gly Leu
145					150				155					160
Glu	Thr	Val	Tyr	Gly	His	Leu	Ser	Lys	Gln	Leu	Val	Glu	Glu	Asn Gln
				165					170					175
Leu	Val	Lys	Ala	Gly	Glu	Pro	Ile	Ala	Leu	Gly	Gly	Asn	Thr	Gly Arg
			180					185					190	
Ser	Thr	Gly	Ser	His	Leu	His	Phe	Glu	Thr	Arg	Phe	Leu	Gly	Ile Ala
		195					200					205		
Ile	Asn	Pro	Ala	Leu	Met	Phe	Asp	Phe	Pro	Lys	Gln	Asp	Ile	Val Ala
	210					215					220			
Asp	Thr	Tyr	Thr	Phe	Arg	Lys	Thr	Arg	Gly	Tyr	Glu	Arg	Asn	Arg Ala
225					230				235					240
Gly	Ser	His	Asp	Thr	Asn	Ile	Ala	Ser	Asp	Gly	Glu	Ile	Arg	Tyr Tyr
			245						250					255
Lys	Val	Lys	Lys	Gly	Asp	Ser	Leu	Ser	Arg	Ile	Ala	Lys	Leu	Arg Gly
			260				265						270	
Val	Ser	Val	Ser	Thr	Leu	Cys	Lys	Leu	Asn	Arg	Ile	Thr	Thr	Lys Thr
		275					280					285		
Thr	Leu	Arg	Pro	Gly	Gln	Val	Leu	Arg	Cys	Ser				
	290					295								

<210> 9662

<211> 184

<212> PRT

<213> B.fragilis

<400> 9662

Ile	Met	Gly	Thr	Val	Tyr	Ala	Phe	Phe	Ala	Asp	Gly	Phe	Glu	Glu	Ile
1				5					10					15	
Glu	Ala	Leu	Thr	Thr	Ile	Asp	Thr	Leu	Arg	Arg	Ala	Gly	Leu	Asp	Val
			20					25					30		
Glu	Ile	Val	Ser	Val	Thr	Pro	Asp	Glu	Ile	Val	Val	Gly	Ala	His	Asp
		35					40					45			
Val	Ser	Val	Leu	Cys	Asp	Lys	Asn	Phe	Glu	Asn	Cys	Asp	Phe	Phe	Asp
	50					55					60				
Ala	Glu	Leu	Leu	Phe	Leu	Pro	Gly	Gly	Met	Pro	Gly	Ala	Ala	Thr	Leu
65					70				75					80	
Asp	Lys	His	Glu	Gly	Leu	Arg	Lys	Leu	Ile	Leu	Ser	Phe	Ala	Glu	Lys
				85					90					95	
Asn	Lys	Pro	Ile	Ala	Ala	Ile	Cys	Ala	Ala	Pro	Met	Val	Leu	Gly	Lys
		100						105					110		
Leu	Gly	Leu	Leu	Lys	Gly	Arg	Arg	Val	Thr	Cys	Tyr	Pro	Ser	Phe	Glu
		115					120						125		
Gln	Tyr	Leu	Asp	Gly	Ala	Asp	Cys	Thr	Asn	Glu	Pro	Val	Val	Arg	Asp
	130					135					140				
Gly	Asn	Ile	Ile	Thr	Gly	Met	Gly	Pro	Gly	Ala	Ala	Met	Glu	Phe	Ala
145					150				155					160	
Leu	Thr	Ile	Val	Asp	Thr	Leu	Leu	Gly	Lys	Glu	Lys	Val	Asn	Glu	Leu
				165				170						175	
Val	Glu	Ala	Met	Cys	Val	Arg	Arg								

180

<210> 9663
 <211> 166
 <212> PRT
 <213> B.fragilis

<400> 9663

Ile	Asn	Glu	His	Phe	Asn	Leu	Leu	Lys	Leu	Tyr	Val	Met	Met	Glu	Lys
1				5					10					15	
Thr	Leu	Val	Ile	Leu	Lys	Pro	Cys	Thr	Leu	Gln	Arg	Gly	Leu	Val	Gly
			20					25					30		
Glu	Ile	Thr	Arg	Arg	Phe	Glu	Arg	Lys	Gly	Leu	Arg	Leu	Ala	Gly	Met
		35				40						45			
Lys	Met	Val	Gln	Leu	Thr	Asp	Glu	Val	Leu	Ser	Glu	His	Tyr	Ser	His
	50					55					60				
Leu	Ser	Ser	Lys	Pro	Phe	Phe	Gln	Arg	Val	Lys	Asp	Ser	Met	Met	Thr
65					70					75					80
Ala	Pro	Val	Ile	Val	Cys	Cys	Phe	Glu	Gly	Val	Asp	Ala	Ile	Gln	Ala
				85					90					95	
Val	Arg	Ala	Leu	Ala	Gly	Pro	Thr	Asn	Gly	Arg	Leu	Ala	Ala	Pro	Gly
			100						105					110	
Thr	Ile	Arg	Gly	Asp	Tyr	Ser	Met	Ser	Phe	Gln	Glu	Asn	Ile	Val	His
		115					120					125			
Thr	Ser	Asp	Ser	Pro	Glu	Thr	Ala	Ala	Val	Glu	Leu	Asn	Arg	Phe	Phe
		130				135					140				
Lys	Pro	Glu	Glu	Ile	Phe	Asp	Tyr	Lys	Gln	Ala	Thr	Phe	Asp	Tyr	Leu
145					150					155					160
Tyr	Ala	Asn	Asp	Glu	Tyr										
				165											

<210> 9664
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 9664

Asp	Asn	Ser	Asn	Thr	Glu	Lys	Lys	Ser	Gln	Ile	Cys	Asp	Ile	Leu	Glu
1				5					10					15	
Thr	Phe	Ile	Asn	Met	Lys	Phe	Ala	Ile	Phe	Gly	Asn	Thr	Tyr	Gln	Ala
			20					25					30		
Lys	Lys	Ser	Ser	His	Ala	Ala	Thr	Leu	Phe	Lys	Leu	Leu	Glu	Lys	His
		35					40					45			
Gly	Ala	Glu	Ile	Cys	Val	Cys	Arg	Glu	Phe	His	Arg	Phe	Leu	Lys	Ser
	50					55					60				
Asp	Leu	Lys	Leu	Asn	Val	Lys	Ala	Asp	Asp	Leu	Phe	Asp	Glu	Asn	Asn
65					70					75					80
Phe	Asp	Ala	Asp	Met	Val	Ile	Ser	Ile	Gly	Gly	Asp	Gly	Thr	Phe	Leu
				85					90					95	
Lys	Ala	Ala	Arg	Arg	Val	Gly	Asn	Lys	Gly	Ile	Pro	Ile	Leu	Gly	Ile
			100					105						110	
Asn	Thr	Gly	Arg	Leu	Gly	Phe	Leu	Ala	Asp	Val	Ser	Pro	Glu	Glu	Met
		115					120						125		
Glu	Glu	Thr	Ile	Glu	Glu	Val	Tyr	Gln	Asn	His	Tyr	Thr	Val	Glu	Glu
		130				135					140				
Arg	Ser	Val	Leu	Gln	Leu	Leu	Cys	Asp	Asp	Lys	His	Leu	Gln	Asn	Ser
145					150					155					160
Pro	Tyr	Ala	Leu	Asn	Glu	Ile	Ala	Ile	Leu	Lys	Arg	Asp	Ser	Ser	Ser
				165					170					175	

Met Ile Ser Ile Arg Thr Ala Ile Asn Gly Ala His Leu Thr Thr Tyr
 180 185 190
 Gln Ala Asp Gly Leu Ile Ile Ala Thr Pro Thr Gly Ser Thr Ala Tyr
 195 200 205
 Ser Leu Ser Val Gly Gly Pro Ile Ile Val Pro His Ser Lys Thr Ile
 210 215 220
 Ala Ile Thr Pro Val Ala Pro His Ser Leu Asn Val Arg Pro Ile Val
 225 230 235 240
 Ile Cys Asp Asp Trp Glu Ile Thr Leu Asp Val Glu Ser Arg Ser His
 245 250 255
 Asn Phe Leu Val Ala Ile Asp Gly Ser Ser Glu Thr Cys Lys Glu Thr
 260 265 270
 Thr Arg Leu Thr Ile Arg Arg Ala Asp Tyr Ser Ile Lys Val Val Lys
 275 280 285
 Arg Phe Asn His Ile Phe Phe Asp Thr Leu Arg Thr Lys Met Met Trp
 290 295 300
 Gly Ala Asp Ser Arg Val
 305 310

<210> 9665

<211> 257

<212> PRT

<213> B.fragilis

<400> 9665

Pro Ser Ile Asp Pro Pro Ala Asp Pro Ser Ser Pro Val Val Lys Thr
 1 5 10 15
 Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu
 20 25 30
 Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly
 35 40 45
 Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His
 50 55 60
 Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe
 65 70 75 80
 Ala Leu Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu
 85 90 95
 Leu Asn Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu
 100 105 110
 Val Ile Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu
 115 120 125
 Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser
 130 135 140
 Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg
 145 150 155 160
 Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys
 165 170 175
 Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile
 180 185 190
 His Asn Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe
 195 200 205
 Gly Leu Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile
 210 215 220
 Ser Val Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn
 225 230 235 240
 Ile Tyr Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe
 245 250 255

Gly

<210> 9666
 <211> 444
 <212> PRT
 <213> B.fragilis

<400> 9666

Asn	Leu	Lys	Asp	Arg	Glu	Leu	His	Ile	Ile	Gln	Lys	Val	Trp	Thr	Asn
1			5						10					15	
Leu	Cys	Arg	Phe	Ala	Leu	Ala	Gly	Val	Phe	Ile	Phe	Ser	Gly	Phe	Ala
			20					25					30		
Lys	Ala	Val	Asp	Pro	Leu	Gly	Ser	Glu	Tyr	Lys	Ile	Gln	Asp	Tyr	Leu
		35					40					45			
Asp	Ala	Phe	Gly	Met	Gly	Thr	Trp	Phe	Pro	Ala	Phe	Phe	Pro	Leu	Leu
	50					55					60				
Ala	Gly	Ile	Val	Leu	Ser	Ala	Ile	Glu	Phe	Ser	Val	Gly	Ile	Phe	Leu
65					70					75					80
Phe	Phe	Gly	Ile	Arg	Lys	Thr	Thr	Ala	Thr	Trp	Leu	Ala	Leu	Leu	Leu
				85					90					95	
Met	Ile	Phe	Met	Thr	Pro	Leu	Thr	Leu	Tyr	Leu	Ala	Leu	Ala	Asn	Pro
			100					105					110		
Val	Ser	Asp	Cys	Gly	Cys	Phe	Gly	Asp	Ala	Trp	Val	Leu	Thr	Asn	Trp
		115					120					125			
Gln	Thr	Phe	Trp	Lys	Asn	Ile	Ile	Leu	Leu	Ile	Ala	Ala	Ile	Ser	Val
	130					135					140				
Phe	Arg	Trp	Lys	His	Gln	Met	Ile	Arg	Phe	Ile	Ser	Ala	Lys	Met	Glu
145					150					155					160
Trp	Leu	Val	Ser	Leu	Tyr	Thr	Phe	Leu	Tyr	Val	Phe	Ala	Leu	Ser	Phe
				165					170					175	
Tyr	Cys	Leu	Gly	Asn	Leu	Pro	Ile	Leu	Asp	Phe	Arg	Pro	Tyr	Lys	Ile
			180					185				190			
Gly	Lys	Asn	Ile	Pro	Glu	Gly	Met	Asp	Val	Pro	Glu	Gly	Ala	Lys	Pro
		195					200					205			
Thr	Val	Tyr	Glu	Ser	Val	Phe	Val	Leu	Glu	Lys	Asn	Gly	Glu	Lys	Lys
	210					215						220			
Glu	Phe	Ser	Leu	Glu	Asn	Tyr	Pro	Asp	Ser	Thr	Trp	Lys	Phe	Ile	Glu
225					230					235					240
Ala	Arg	Thr	Ile	Val	Lys	Glu	Lys	Gly	Tyr	Glu	Pro	Ser	Ile	His	Asp
				245					250					255	
Phe	Ser	Met	Thr	Asn	Leu	Glu	Thr	Gly	Glu	Asp	Ile	Thr	Glu	Glu	Val
			260					265					270		
Leu	Ser	Asp	Lys	Asn	Tyr	Thr	Phe	Leu	Leu	Val	Ala	His	Arg	Ile	Glu
		275					280					285			
Glu	Ala	Asp	Asp	Ser	Asn	Ile	Asp	Leu	Ile	Asn	Glu	Ile	Tyr	Asp	Tyr
	290					295					300				
Ala	Val	Glu	His	Gly	Tyr	Gly	Phe	Tyr	Cys	Leu	Thr	Ser	Ser	Leu	Asp
305					310				315						320
Asp	Gln	Ile	Glu	Gln	Trp	Lys	Asp	Lys	Thr	Gly	Ala	Glu	Tyr	Pro	Phe
				325					330					335	
Cys	Leu	Met	Asp	Asp	Ile	Thr	Leu	Lys	Thr	Met	Ile	Arg	Ser	Asn	Pro
			340					345					350		
Gly	Leu	Met	Leu	Ile	Lys	Glu	Gly	Thr	Ile	Leu	Asn	Lys	Trp	Ser	Asp
		355					360					365			
Ser	Glu	Leu	Pro	Asp	Glu	Tyr	Ala	Leu	Thr	Asp	Lys	Leu	Glu	Asn	Leu
	370					375					380				
Glu	Leu	Gly	Lys	Gln	Lys	Glu	Glu	Ser	Asp	Val	His	Thr	Ile	Gly	Tyr
385					390				395						400
Val	Leu	Leu	Trp	Phe	Ala	Ile	Pro	Leu	Leu	Met	Val	Leu	Gly	Val	Asp
				405					410					415	

Ile Leu Val Val Lys Arg Leu Glu Lys Arg Arg Lys Arg Ala Ala Glu
 420 425 430
 Lys Ala Val Glu Asn Ser Lys Ser Ser Ser Glu Ala
 435 440

<210> 9667

<211> 85

<212> PRT

<213> B.fragilis

<400> 9667

Arg Arg His Cys Thr Met Glu Trp Met Tyr Arg Leu His Gly Gln Phe
 1 5 10 15
 Gly Ala Thr Asp Thr Asp Ala Met Trp Val Ser Gly Trp Gly Gly Ser
 20 25 30
 Ala Leu His Arg Arg Leu Cys Arg Cys Leu Met Cys Cys Ile Gly Leu
 35 40 45
 Val Ser Asp Thr Ile Arg Ile Arg Pro Gly Gly Asn Thr Ile Gly Val
 50 55 60
 Ser Cys Glu Gly Val Ser Met Asp Ala Asn Gly Met Arg Ala Arg Ala
 65 70 75 80
 Gly Ile Val Thr Ala
 85

<210> 9668

<211> 223

<212> PRT

<213> B.fragilis

<400> 9668

Asp Val Lys Leu Met Cys Arg Thr Ala Leu Ile Val Ala Gly Gly Lys
 1 5 10 15
 Gly Leu Arg Met Gly Ser Glu Leu Pro Lys Gln Phe Leu Pro Ile Gly
 20 25 30
 Gly Lys Pro Val Leu Met Arg Thr Leu Glu Ala Phe His Arg Phe Asp
 35 40 45
 Glu Lys Met Gln Ile Ile Leu Val Leu Pro Arg Glu Gln Gln Asp Phe
 50 55 60
 Trp Arg Glu Leu Cys Glu Glu His Gly Phe Asp Ile Lys His Leu Ile
 65 70 75 80
 Ala Asp Gly Gly Glu Thr Arg Phe His Ser Val Lys Asn Gly Leu Ala
 85 90 95
 Leu Val Asn Gly Ile Gly Val Val Gly Ile His Asp Gly Val Arg Pro
 100 105 110
 Phe Val Ser Gln Glu Val Ile Ala Arg Cys Phe Arg Glu Ala Val Val
 115 120 125
 Arg Lys Ala Val Ile Pro Val Ile Asp Val Val Glu Thr Val Arg His
 130 135 140
 Leu Thr Glu Ser Gly Ser Glu Thr Val Ser Arg Asn Asp Tyr Lys Leu
 145 150 155 160
 Val Gln Thr Pro Gln Val Phe Asp Ala Asp Leu Leu Lys Arg Ala Tyr
 165 170 175
 Glu Gln Glu Phe Thr Pro Phe Phe Thr Asp Asp Ala Ser Val Val Glu
 180 185 190
 Ala Met Gly Val Pro Val Tyr Leu Val Glu Gly Asn Arg Glu Asn Ile
 195 200 205
 Lys Ile Thr Thr Pro Phe Asp Leu Lys Val Ala Ser Ala Leu Leu
 210 215 220

<210> 9669
 <211> 267
 <212> PRT
 <213> B.fragilis

<400> 9669

Met	Asn	Asn	Arg	Ile	Glu	Asn	Leu	Leu	Thr	Leu	Leu	Ile	Lys	Asn	Lys
1				5					10					15	
Met	Arg	Lys	Asn	Ile	Val	Ala	Gly	Asn	Trp	Lys	Met	Asn	Lys	Thr	Leu
			20					25					30		
Gln	Glu	Gly	Ile	Ala	Leu	Ala	Lys	Glu	Leu	Asn	Glu	Ala	Leu	Ala	Asn
		35					40					45			
Glu	Lys	Pro	Asn	Cys	Asp	Val	Ile	Ile	Cys	Thr	Pro	Phe	Ile	His	Leu
	50					55					60				
Ala	Ser	Val	Thr	Pro	Leu	Val	Asp	Ala	Ala	Lys	Ile	Gly	Val	Gly	Ala
65					70					75					80
Glu	Asn	Cys	Ala	Asp	Lys	Glu	Ser	Gly	Ala	Tyr	Thr	Gly	Glu	Val	Ser
			85						90					95	
Ala	Ala	Met	Val	Ala	Ser	Thr	Gly	Ala	Lys	Tyr	Val	Ile	Leu	Gly	His
			100					105						110	
Ser	Glu	Arg	Ala	Tyr	Tyr	Gly	Glu	Thr	Val	Glu	Ile	Leu	Lys	Asp	
		115				120						125			
Lys	Val	Lys	Leu	Ala	Leu	Ala	Asn	Gly	Leu	Thr	Pro	Ile	Phe	Cys	Ile
	130					135					140				
Gly	Glu	Val	Leu	Glu	Glu	Arg	Glu	Ala	Asn	Lys	Gln	Asn	Glu	Val	Val
145					150					155					160
Ala	Ala	Gln	Leu	Ala	Ser	Val	Phe	Asp	Leu	Ser	Ala	Glu	Asp	Phe	Ser
			165					170						175	
Lys	Ile	Val	Leu	Ala	Tyr	Glu	Pro	Val	Trp	Ala	Ile	Gly	Thr	Gly	Lys
		180						185					190		
Thr	Ala	Ser	Pro	Ala	Gln	Ala	Gln	Glu	Ile	His	Ala	Phe	Ile	Arg	Ser
		195					200					205			
Ala	Val	Ala	Glu	Lys	Tyr	Gly	Lys	Glu	Ile	Ala	Asp	Asn	Thr	Ser	Ile
	210					215					220				
Leu	Tyr	Gly	Gly	Ser	Cys	Lys	Pro	Ser	Asn	Ala	Lys	Glu	Leu	Phe	Ala
225					230					235					240
Asn	Pro	Asp	Val	Asp	Gly	Gly	Leu	Ile	Gly	Gly	Ala	Ala	Leu	Lys	Val
			245						250					255	
Ala	Asp	Phe	Lys	Gly	Ile	Ile	Asp	Ala	Phe	Asn					
			260					265							

<210> 9670
 <211> 707
 <212> PRT
 <213> B.fragilis

<400> 9670

Phe	Glu	Ser	Ser	Phe	Ser	Leu	Val	Val	Met	Phe	Asp	Leu	Thr	Thr	Arg
1				5					10					15	
Asp	Ile	Lys	Tyr	Leu	Ser	Gly	Val	Gly	Pro	Gln	Lys	Ala	Ala	Val	Leu
			20					25					30		
Asn	Lys	Glu	Leu	Glu	Ile	Tyr	Ser	Leu	His	Asp	Leu	Leu	Tyr	Tyr	Phe
		35				40						45			
Pro	Tyr	Lys	Tyr	Val	Asp	Arg	Ser	Arg	Ile	Tyr	Tyr	Ile	His	Glu	Ile
	50				55						60				
Asp	Gly	Asn	Met	Pro	Tyr	Ile	Gln	Leu	Lys	Gly	Lys	Ile	Leu	Gly	Phe
65					70					75					80
Glu	Thr	Phe	Gly	Glu	Gly	Arg	Gln	Arg	Arg	Leu	Leu	Ala	His	Phe	Ser
				85					90					95	

Asp	Gly	Thr	Gly	Val	Val	Asp	Leu	Val	Trp	Phe	Gln	Gly	Ile	Lys	Tyr	100	105	110
Val	Thr	Asn	Lys	Tyr	Lys	Leu	His	Glu	Glu	Tyr	Ile	Val	Phe	Gly	Lys	115	120	125
Pro	Thr	Val	Phe	Asn	Gly	Arg	Ile	Asn	Val	Ala	His	Pro	Asp	Ile	Asp	130	135	140
Ser	Pro	Ala	Asp	Leu	Lys	Leu	Ser	Ser	Met	Gly	Leu	Gln	Pro	Tyr	Tyr	145	150	155
Asn	Thr	Thr	Glu	Lys	Met	Lys	Arg	Ser	Phe	Leu	Asn	Ser	His	Ala	Ile	165	170	175
Glu	Lys	Met	Met	Ala	Thr	Val	Ile	Gly	Gln	Ile	Gln	Glu	Pro	Leu	Ser	180	185	190
Glu	Thr	Leu	Ser	Pro	Lys	Leu	Ile	Ala	Asp	His	His	Leu	Met	Ser	Leu	195	200	205
Thr	Asp	Ala	Leu	Arg	Asn	Ile	His	Phe	Pro	Ser	Asn	Pro	Glu	Leu	Leu	210	215	220
Arg	Lys	Ala	Gln	Tyr	Arg	Leu	Lys	Phe	Glu	Glu	Leu	Phe	Tyr	Val	Gln	225	230	235
Leu	Asn	Ile	Leu	Arg	Tyr	Ala	Lys	Asp	Arg	Gln	Arg	Lys	Tyr	Arg	Gly	245	250	255
Tyr	Val	Phe	Glu	Thr	Val	Gly	Glu	Ile	Phe	Asn	Thr	Phe	Tyr	Ser	Lys	260	265	270
Asn	Leu	Pro	Phe	Glu	Leu	Thr	Gly	Ala	Gln	Lys	Arg	Val	Leu	Arg	Glu	275	280	285
Ile	Arg	Gln	Asp	Val	Gly	Cys	Gly	Lys	Gln	Met	Asn	Arg	Leu	Leu	Gln	290	295	300
Gly	Asp	Val	Gly	Ser	Gly	Lys	Thr	Leu	Val	Ala	Leu	Met	Ser	Met	Leu	305	310	315
Met	Ala	Leu	Asp	Asn	Gly	Phe	Gln	Ala	Cys	Met	Met	Ala	Pro	Thr	Glu	325	330	335
Ile	Leu	Ala	Asn	Gln	His	Tyr	Asp	Thr	Ile	Arg	Glu	Leu	Leu	Phe	Gly	340	345	350
Met	Asp	Val	Arg	Val	Glu	Leu	Leu	Thr	Gly	Ser	Val	Lys	Gly	Lys	Lys	355	360	365
Arg	Glu	Ala	Ile	Leu	Ala	Gly	Leu	Leu	Thr	Gly	Asp	Val	His	Ile	Leu	370	375	380
Ile	Gly	Thr	His	Ala	Val	Ile	Glu	Asp	Thr	Val	Asn	Phe	Ala	Ser	Leu	385	390	395
Gly	Leu	Ala	Val	Ile	Asp	Glu	Gln	His	Arg	Phe	Gly	Val	Ala	Gln	Arg	405	410	415
Ala	Arg	Leu	Trp	Ser	Lys	Ser	Val	Gln	Pro	Pro	His	Val	Leu	Val	Met	420	425	430
Thr	Ala	Thr	Pro	Ile	Pro	Arg	Thr	Leu	Ala	Met	Thr	Leu	Tyr	Gly	Asp	435	440	445
Leu	Asp	Val	Ser	Val	Ile	Asp	Glu	Leu	Pro	Pro	Gly	Arg	Lys	Pro	Ile	450	455	460
Ala	Thr	Ile	His	Gln	Phe	Asp	Asn	Arg	Arg	Glu	Ser	Leu	Tyr	Cys	Ser	465	470	475
Val	Arg	Lys	Gln	Ile	Glu	Glu	Gly	Arg	Gln	Val	Tyr	Ile	Val	Tyr	Pro	485	490	495
Leu	Ile	Lys	Glu	Ser	Glu	Lys	Ile	Asp	Leu	Lys	Asn	Leu	Glu	Glu	Gly	500	505	510
Tyr	Leu	His	Ile	Cys	Glu	Glu	Phe	Pro	Asp	Cys	Lys	Val	Cys	Lys	Val	515	520	525
His	Gly	Lys	Met	Lys	Pro	Ala	Glu	Lys	Asp	Ala	Gln	Met	Gln	Leu	Phe	530	535	540
Ile	Ser	Gly	Asp	Ala	Gln	Ile	Met	Val	Ala	Thr	Thr	Val	Ile	Glu	Val	545	550	555
Gly	Val	Asn	Val	Pro	Asn	Ala	Ser	Val	Met	Ile	Ile	Glu	Asn	Ala	Glu	560		

565 570 575
 Arg Phe Gly Leu Ser Gln Leu His Gln Leu Arg Gly Arg Val Gly Arg
 580 585 590
 Gly Ala Asp Gln Ser Tyr Cys Ile Leu Val Thr Thr Tyr Lys Leu Thr
 595 600 605
 Glu Glu Thr Arg Lys Arg Leu Glu Ile Met Val Arg Thr Asn Asp Gly
 610 615 620
 Phe Glu Ile Ala Glu Ala Asp Leu Lys Leu Arg Gly Pro Gly Asp Leu
 625 630 635 640
 Glu Gly Thr Gln Gln Ser Gly Ile Ala Phe Asp Leu Lys Ile Ala Asp
 645 650 655
 Ile Ala Arg Asp Gly Gln Leu Leu Gln Tyr Val Arg Thr Ile Ala Glu
 660 665 670
 Glu Ile Thr Asp Ala Asp Pro Gly Gly Val Leu Pro Glu Asn Ala Ile
 675 680 685
 Leu Trp Gln Gln Leu Arg Ala Leu Arg Lys Thr Asn Val Asn Trp Ala
 690 695 700
 Ala Ile Ser
 705

<210> 9671
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 9671
 Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val
 1 5 10 15
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val
 20 25 30
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln
 35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr
 50 55 60
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 9672
 <211> 293
 <212> PRT
 <213> B.fragilis

<400> 9672
 Asn Gly Val Gly Tyr Thr Pro Ala Gly Asn Lys Glu Glu Met Asn Ile
 1 5 10 15
 Lys Arg Lys Ser Glu Tyr Ile Gly Ala Leu Gly Ala Leu Leu Val His
 20 25 30
 Val Ala Ile Ile Ala Leu Leu Ile Leu Val Ser Phe Ala Ile Pro His
 35 40 45
 Pro Asp Glu Glu Ala Gly Gly Val Pro Val Met Met Gly Asp Val Asp
 50 55 60
 Ala Ala Tyr Gly Asn Tyr Asp Pro Ser Thr Met Val Asp Val Glu Val
 65 70 75 80
 Leu Pro Glu Glu Val Pro Ala Pro Gln Pro Glu Pro Glu Val Glu Thr
 85 90 95
 Glu Gln Glu Met Ile Thr Gln Thr Glu Glu Glu Thr Val Val Val Lys
 100 105 110

Pro Lys Ala Glu Pro Lys Lys Glu Lys Pro Lys Val Ala Lys Lys Pro
 115 120 125
 Glu Lys Thr Pro Glu Glu Lys Ala Ala Glu Ala Lys Lys Leu Ala Glu
 130 135 140
 Glu Lys Ala Glu Arg Glu Arg Lys Ala Ala Ala Glu Ala Ala Ser Lys
 145 150 155 160
 Arg Val Ala Gly Ala Phe Gly Lys Gly Ser Gln Met Gly Gly Ser Lys
 165 170 175
 Gly Thr Ala Thr Ser Gly Glu Gly Val Glu Gly Ser Lys Asp Gly Asn
 180 185 190
 Ser Leu Thr Gly Ala Lys Ser Gly Val Gly Gly Tyr Gly Thr Phe Asn
 195 200 205
 Leu Gly Gly Arg Ser Ile Gly Glu Gly Gly Leu Pro Arg Pro Val Tyr
 210 215 220
 Asn Val Gln Glu Glu Gly Arg Val Val Val Ser Ile Thr Val Asn Pro
 225 230 235 240
 Ala Gly His Val Ile Ala Thr Ser Ile Asn Arg Leu Thr Asn Thr Val
 245 250 255
 Asn Ser Thr Leu Arg Lys Ala Ala Glu Asp Ala Ala Lys Lys Ala Arg
 260 265 270
 Phe Asn Ala Val Asp Gly Val Asn Asn Gln Thr Gly Thr Ile Thr Tyr
 275 280 285
 Tyr Phe Asn Leu Lys
 290

<210> 9673

<211> 211

<212> PRT

<213> B.fragilis

<400> 9673

Lys Leu Arg Ile Ile Leu Arg His Arg Thr Met Thr Lys Leu Ser Val
 1 5 10 15
 Asn Ile Asn Lys Val Ala Thr Leu Arg Asn Ala Arg Gly Gly Asn Val
 20 25 30
 Pro Asn Val Val Lys Val Ala Leu Asp Cys Glu Ser Phe Gly Ala Asp
 35 40 45
 Gly Ile Thr Val His Pro Arg Pro Asp Glu Arg His Ile Arg Arg Ser
 50 55 60
 Asp Val Tyr Asp Leu Arg Pro Leu Leu Arg Thr Glu Phe Asn Ile Glu
 65 70 75 80
 Gly Tyr Pro Ser Pro Glu Phe Ile Asp Leu Val Leu Lys Val Lys Pro
 85 90 95
 His Gln Val Thr Leu Val Pro Asp Asp Pro Ser Gln Ile Thr Ser Asn
 100 105 110
 Ser Gly Trp Asp Thr Lys Val Asn Phe Asp Phe Leu Thr Glu Val Leu
 115 120 125
 Asp Glu Phe Asn Gly Ala Gly Ile Arg Thr Ser Val Phe Val Ala Pro
 130 135 140
 Asp Ala Glu Met Ile Glu Tyr Ala Ala Lys Ala Gly Ala Asp Arg Val
 145 150 155 160
 Glu Leu Tyr Thr Glu Pro Tyr Ala Thr Ala Tyr Pro Lys Asp Pro Ala
 165 170 175
 Ala Ala Ala Ala Pro Phe Val Glu Ala Ala Lys Ala Ala Arg Thr Leu
 180 185 190
 Gly Ile Gly Leu Asn Ala Gly His Asp Leu Ser Leu Phe Glu Ser Glu
 195 200 205
 Leu Phe Leu
 210

<210> 9674
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 9674
 Gln Ile Gly Ile Leu Lys Asn Tyr Phe Met Ala Leu Lys Arg Arg Ala
 1 5 10 15
 Lys Ile Ser Pro Asn Phe Ser Met Ala Ser Met Thr Asp Val Ile Phe
 20 25 30
 Leu Leu Leu Ile Phe Phe Met Ile Thr Ser Thr Val Val Ser Pro Asn
 35 40 45
 Ala Ile Lys Val Leu Leu Pro Gln Gly Lys Gln Gln Thr Ser Ala Lys
 50 55 60
 Pro Leu Thr Arg Val Ile Ile Asp Lys Asp Leu Asn Tyr Tyr Ala Ala
 65 70 75 80
 Phe Gly Asn Glu Lys Glu His Ala Leu Gly Val Glu Glu Leu Thr Pro
 85 90 95
 Phe Leu Gln Ser Cys Ala Asp Lys Glu Pro Glu Met Tyr Val Ala Leu
 100 105 110
 Tyr Ala Asp Glu Thr Val Pro Tyr Arg Glu Ile Val Lys Val Leu Asn
 115 120 125
 Ile Ala Asn Glu Asn His Phe Lys Met Val Leu Ala Thr Arg Pro Pro
 130 135 140
 Glu Thr Lys Lys Lys
 145

<210> 9675
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 9675
 Asn Val Leu Met Gly Ile Asp Gln Tyr Asp His Ala Ser Trp Gly Ile
 1 5 10 15
 Thr Arg Pro Ala Phe Phe Glu Ala Ala Leu Asp Tyr Arg Arg Gly Arg
 20 25 30
 Pro Arg Arg Cys Ile Met Met Gly Arg Thr Met Lys Asn Pro His Gly
 35 40 45
 Glu Gly Asn Gly Met His Gln Cys Arg Arg Thr Tyr Glu Gly Trp Ser
 50 55 60
 Ile Leu Asn Gly Pro Ser Arg Ser Val Val His His Asp Arg Ser Met
 65 70 75 80
 Arg Arg Arg Arg Arg Asp Val Ala Ser
 85

<210> 9676
 <211> 245
 <212> PRT
 <213> B.fragilis

<400> 9676
 Lys Leu Ser Ser Leu Met Asn Ala Met Leu Leu Leu Ala Gln Val Ala
 1 5 10 15
 Thr Asn Leu Ala Asp Ser Val Ala Ser Ala Asn Pro Val Leu Thr Pro
 20 25 30
 Val Ser Ala Pro Ala Glu Met Asn Met Leu Asp Met Ala Ile Lys Gly
 35 40 45

Gly Trp Ile Met Ile Val Leu Ala Val Leu Ser Val Val Cys Phe Tyr
 50 55 60
 Ile Leu Phe Glu Arg Asn Tyr Met Ile Arg Lys Ala Gly Lys Glu Asp
 65 70 75 80
 Pro Met Phe Met Glu Lys Ile Lys Asp Tyr Ile His Ser Gly Glu Ile
 85 90 95
 Lys Ser Ala Ile Asn Tyr Cys Arg Thr Ile Asn Thr Pro Ser Ala Arg
 100 105 110
 Met Ile Glu Lys Gly Ile Ser Arg Leu Gly Arg Pro Val Asn Asp Val
 115 120 125
 Gln Val Ala Ile Glu Asn Val Gly Asn Ile Glu Val Ala Lys Leu Glu
 130 135 140
 Lys Gly Leu Thr Val Met Ala Thr Ile Ser Gly Gly Ala Pro Met Leu
 145 150 155 160
 Gly Phe Leu Gly Thr Val Thr Gly Met Val Arg Ala Phe Tyr Glu Met
 165 170 175
 Ala Asn Ala Gly Ser Gly Asn Ile Asp Ile Thr Leu Leu Ser Gly Gly
 180 185 190
 Ile Tyr Glu Ala Met Ile Thr Thr Val Gly Gly Leu Ile Val Gly Ile
 195 200 205
 Ile Ala Met Phe Ala Tyr Asn Tyr Leu Val Met Leu Val Asp Arg Val
 210 215 220
 Val Asn Lys Met Glu Ser Arg Thr Met Glu Phe Met Asp Leu Leu Asn
 225 230 235 240
 Glu Pro Ala Gln Lys
 245

<210> 9677

<211> 185

<212> PRT

<213> B.fragilis

<400> 9677

Asn Pro Phe Leu Ile Met Leu Glu Glu Ile Leu Glu Phe Asn Lys Lys
 1 5 10 15
 Phe Val Glu Asn Arg Gly Tyr Glu Lys Tyr Ile Thr Asn Lys Tyr Pro
 20 25 30
 Asp Lys Lys Ile Ala Ile Leu Ser Cys Met Asp Thr Arg Leu Thr Glu
 35 40 45
 Leu Leu Pro Ala Ala Leu Gly Ile His Asn Gly Asp Val Lys Ile Ile
 50 55 60
 Lys Asn Ala Gly Ala Val Ile Ser His Pro Phe Gly Ser Val Ile Arg
 65 70 75 80
 Ser Leu Leu Val Ala Ile Ile Glu Leu Gly Val Glu Glu Val Met Val
 85 90 95
 Ile Ala His Ser Asp Cys Gly Ala Cys His Met Asn Ser Asp Glu Met
 100 105 110
 Ile Ala His Met Lys Lys Arg Gly Ile Lys Ser Glu Thr Ile Asp Met
 115 120 125
 Ile Arg Tyr Cys Gly Val Asp Phe Asn Ser Trp Leu Gly Gly Phe Asp
 130 135 140
 Asp Pro Val Lys Ser Val Arg Gly Thr Val Arg Ser Ile Glu Asn His
 145 150 155 160
 Pro Leu Ile Pro Lys Asp Val Arg Val His Gly Phe Ile Ile Asp Ser
 165 170 175
 Leu Thr Gly Glu Leu Thr Arg Val Glu
 180 185

<210> 9678

<211> 68
 <212> PRT
 <213> B.fragilis

<400> 9678

Gly	Lys	Ser	Ser	Asp	Cys	Phe	Pro	Phe	Ser	Phe	Leu	Leu	Cys	Ala	Ile
1				5					10					15	
Tyr	Leu	Cys	Lys	Arg	Phe	His	Trp	Lys	Ile	Leu	Arg	Asp	Gly	Ala	Gln
			20					25					30		
Pro	Ile	Arg	Ser	Thr	Phe	Arg	Cys	Asn	Gln	Val	Asn	Val	Thr	Ser	Gly
			35				40					45			
Lys	Gly	Asp	Ala	Val	Ile	Ala	Ser	Ala	Thr	Gln	His	Arg	Asn	Phe	Gly
	50					55					60				
Tyr	Ala	Ala	Pro												
65															

<210> 9679
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 9679

Ser	Ser	Ala	Ser	Gly	Arg	Ala	Ala	Val	Gly	Tyr	Glu	Phe	Asn	Ala	Glu
1				5					10					15	
Ala	Glu	Pro	Val	Arg	Phe	Leu	Pro	Leu	Pro	Val	Ala	Gly	Lys	Ser	His
			20					25					30		
Ala	Phe	Ala	Phe	Arg	Thr	Asp	His	Asn	Lys	Ser	Ile	Lys	Phe	Ile	Arg
			35				40					45			
Arg	Val	Pro	Val	Met	Leu	Ala	Ile	Ile	Lys	Ser	Gly	Ser	Val	Tyr	Gly
	50					55					60				
Gly	Asp	Ser	Thr	Pro	Asp	Arg	Ser	Leu	Arg						
65						70									

<210> 9680
 <211> 364
 <212> PRT
 <213> B.fragilis

<400> 9680

Trp	Ile	Pro	Pro	Ser	Phe	Pro	Ala	His	Ser	Asn	His	Asn	Lys	Tyr	Asn
1				5					10					15	
Lys	Val	Lys	Met	Lys	Asn	Thr	Phe	Leu	Leu	Thr	Phe	Ala	Leu	Ile	Leu
			20					25					30		
Leu	Ala	Gly	Ser	Pro	Leu	Lys	Ala	Gln	Glu	Lys	Glu	Glu	Ala	Ala	Thr
			35				40					45			
Leu	Asn	Lys	Val	Val	Asn	Thr	Leu	Lys	Glu	Arg	Ile	Thr	Leu	Ala	Gly
	50					55					60				
Tyr	Ala	Gln	Leu	Gly	Tyr	Thr	Tyr	Asp	Asp	Ala	Ala	Lys	Lys	Met	Asn
65					70				75					80	
Thr	Phe	Asp	Ile	Lys	Arg	Ile	Ile	Phe	Met	Ala	His	Gly	Lys	Ile	Thr
			85					90						95	
Asp	Arg	Trp	Thr	Cys	Asp	Phe	Met	Tyr	Asp	Phe	Tyr	Asn	Gly	Gly	Met
			100					105					110		
Leu	Leu	Glu	Val	Tyr	Thr	Asp	Tyr	Arg	Ile	Leu	Pro	Gly	Leu	Lys	Val
			115				120					125			
Arg	Ile	Gly	Glu	Phe	Lys	Val	Pro	Tyr	Thr	Ile	Glu	Asn	Glu	Leu	Ser
	130					135					140				
Pro	Thr	Thr	Val	Glu	Leu	Ile	Asn	Cys	Tyr	Ser	Gln	Ser	Val	Cys	Tyr
145					150					155					160

Leu Ala Gly Val Ser Gly Ser Asp Val Ala Cys Gly Met Thr Ser Gly
 165 170 175
 Arg Asp Ile Gly Ala Met Val His Gly Gly Leu Leu Asn Asp Leu Leu
 180 185 190
 Cys Tyr Lys Leu Ala Ile Met Asn Gly Gln Gly Leu Asn Ile Lys Asp
 195 200 205
 Lys Asn Asn Gln Lys Asp Ile Ile Gly Asn Leu Met Val Asn Pro Leu
 210 215 220
 Lys Trp Leu Ser Val Gly Gly Ser Phe Ile Lys Gly Thr Gly His Ala
 225 230 235 240
 Ile Ala Asp Ser Glu Ile Thr Gly Ile Arg Ala Gly Glu Asn Tyr Thr
 245 250 255
 Lys Asn Arg Trp Ser Ile Gly Gly Val Ile Thr Thr Thr Pro Phe Ser
 260 265 270
 Leu Arg Ser Glu Tyr Leu Ala Gly Lys Asp Gly Gly Val Lys Ser Asp
 275 280 285
 Gly Phe Tyr Ala Thr Gly Cys Tyr Arg Met Leu Arg Asn Phe Asp Leu
 290 295 300
 Val Ala Ser Tyr Asp Tyr Phe Asn Ala Asn Lys Ala Val Ser Arg Lys
 305 310 315 320
 Gln Thr Asn Tyr Ile Ala Gly Leu Gln Tyr Trp Phe Tyr Pro Lys Cys
 325 330 335
 Arg Leu Gln Ala Gln Tyr Thr Phe Cys Asp Arg Asn Lys Gly Lys Asp
 340 345 350
 Ser Asn Leu Phe Gln Ala Gln Val Gln Val Arg Phe
 355 360

<210> 9681

<211> 474

<212> PRT

<213> B.fragilis

<400> 9681

Gln Ala Gln Pro Ser Phe Ile Asn His Thr Ile Ser Ala Tyr Asn Ser
 1 5 10 15
 Val Phe Thr Phe Gly Tyr Arg Gln Phe Gly Arg Asn Arg Thr Gly Ile
 20 25 30
 Lys Cys His Asp Asn Val Val Pro Ser Ile Ser Val Ser Ala Val Phe
 35 40 45
 Gln Ala Glu Ser His Gln Ile Thr Asn Ile Tyr Arg Glu Glu Phe Gln
 50 55 60
 Val Leu Thr Tyr His Leu Gly Ile Ser His Thr Glu Ser Gly Met Gly
 65 70 75 80
 Phe Thr Asn Thr Asp Gln Thr Leu Ile Ile Gly Glu His Ile Phe Val
 85 90 95
 Ser Cys Leu Ser Val Pro Ile Asn Gly Ile Asn Arg Ile Gly Thr Leu
 100 105 110
 Lys Thr Ile Met His Pro Phe Leu Val Thr His His Leu Phe Ser Gly
 115 120 125
 Ile Asp Glu Arg Asn Thr Leu Arg Ser Gln His Cys Arg Leu Arg Gln
 130 135 140
 Phe Val Lys Ser Tyr Glu Leu Phe Gly Cys Asp Ala Gly Asp Thr Arg
 145 150 155 160
 Leu Gln Ala Ile Tyr Gln Ala His Ile Ile Val Ala Gly Tyr Val Thr
 165 170 175
 Asp His Leu Ser Arg Leu Gly Ser Pro Gly Ser Phe Thr Val Ile His
 180 185 190
 Arg Ile Ile Val Asp Leu Arg Val Thr Asp Ser Ser Tyr Asn Thr Lys
 195 200 205

Leu Asn Ala Leu Phe Phe Pro Gly Asp Pro Gly Lys Glu Arg Ser Leu
 210 215 220
 Met Ile Ile Ile Lys Arg Thr Thr Gln Arg Ile Thr His Phe Ile Gly
 225 230 235 240
 Lys Gly Gly Asn Thr Arg His Phe Thr Ser Ile Asp Leu His Cys Gln
 245 250 255
 Arg Ile Thr Arg Ile Leu Arg Cys Phe Arg Cys Pro Thr Phe Thr Ile
 260 265 270
 Asn Asn Asp Arg Arg Ile Tyr Ser Thr Asp Arg Leu Thr Asp Phe Ile
 275 280 285
 His Arg Leu Asp Val Val Asn Ala His Gln Val Glu Ala Glu Thr Ile
 290 295 300
 Asp Met Val Phe Leu Asp Pro Val Lys His Gly Phe Asn His Ile Phe
 305 310 315 320
 Thr His His Arg Pro Val Ala Cys Arg Leu Val Thr Thr Ser Arg Thr
 325 330 335
 Ile Ser Gln Arg Thr Ile Arg Leu Leu Ala Ile Lys Ile Ser Arg Tyr
 340 345 350
 Arg Thr Phe Glu Val Thr Ala Ile Gly Val Val Cys Met Ile Val Tyr
 355 360 365
 His Ile Glu His Tyr Pro Tyr Thr Gly Phe Val Gln Cys Leu Tyr His
 370 375 380
 Leu Leu Lys Leu Ala Asp Ala Asp Ser Arg Ile Val Arg Ile Gly Ser
 385 390 395 400
 Ile Arg Thr Ile Gly Tyr Ile Val Ile Leu Arg Ile Ile Ser Pro Val
 405 410 415
 Val Phe Ile Phe Ile Gln Leu Gly Phe Val Tyr Arg Ser Ile Ile Ile
 420 425 430
 Arg Arg Lys Gln Met Asp Val Cys Tyr Ser Gln Leu Asp Gln Met Ile
 435 440 445
 Asn Ser Gly Gln Gln Phe Gly Arg Val His Arg Thr Met Phe Cys Gln
 450 455 460
 Cys Gln Lys Phe Ser Leu Met Leu Asn Pro
 465 470

<210> 9682

<211> 461

<212> PRT

<213> B.fragilis

<400> 9682

Thr Met Gln Phe Leu Ser Phe Ser Phe Leu Ala Leu Phe Thr Leu Cys
 1 5 10 15
 Phe Phe Leu Tyr Tyr Ala Val Lys Gly Arg Ala Arg Asn Leu Ile Leu
 20 25 30
 Leu Val Thr Ser Cys Ile Phe Ile Gly Trp Tyr Tyr Leu Pro Phe Leu
 35 40 45
 Leu Thr Ala Val Val Val Ala Leu Phe Thr Phe Phe Trp Ala Gln Trp
 50 55 60
 Met Glu Ser Arg Ala Lys Ala Gly Lys Lys Thr Lys Pro Val Tyr Ile
 65 70 75 80
 Ala Gly Ile Ile Ala Leu Ile Gly Gly Trp Leu Leu Leu His Gly Thr
 85 90 95
 Val Ile Asp Asp Ile Ile Phe Pro Leu Gly Met Ser Phe Tyr Thr Phe
 100 105 110
 Gln Ala Ile Ser Tyr Leu Thr Asp Val Tyr Trp Gln Glu Gln Arg Ser
 115 120 125
 Glu Arg Asn Trp Val Asp Phe Leu Ile Tyr Met Leu Phe Phe Met Lys
 130 135 140

Phe Leu Ser Gly Pro Ile Glu Arg Gly Gly Asp Leu Leu Pro Gln Leu
 145 150 155 160
 Lys Asp Pro Arg Pro Phe Ile Tyr Ser Asn Ala Val Thr Gly Leu Lys
 165 170 175
 Tyr Ile Leu Leu Gly Leu Ile Lys Lys Leu Leu Ile Ala Asn Gln Ile
 180 185 190
 Ser Pro Gln Thr Asp Val Met Phe His Ser Ile His Asp Leu Ser Gly
 195 200 205
 Val Gln Leu Leu Met Thr Cys Leu Leu Tyr Pro Ile Glu Leu Tyr Ala
 210 215 220
 Asp Phe Ser Gly Tyr Thr Asp Ile Ala Ile Gly Gly Ala Tyr Met Phe
 225 230 235 240
 Gly Ile Lys Leu Ser Pro Asn Phe Asn Arg Pro Phe Ala Ala Arg Ser
 245 250 255
 Thr Ala Asp Phe Trp Arg Arg Trp His Met Ser Leu Ser Phe Trp Val
 260 265 270
 Arg Asp Tyr Leu Tyr Val Pro Leu Thr Ala Gly Thr Arg Asn Trp Gly
 275 280 285
 Gln Trp Gly Ile Tyr Phe Ser Leu Leu Ile Thr Phe Leu Ala Leu Gly
 290 295 300
 Leu Trp His Gly Ala Gly Leu Thr Phe Ala Ile Tyr Gly Leu Ile Gln
 305 310 315 320
 Gly Val Leu Ile Cys Trp Glu Met Lys Thr Ala Ala Phe Arg Tyr Asn
 325 330 335
 Leu Pro Gln Tyr Ile Gly Lys Tyr Ala Ala Asp Ser Leu Leu Ile Val
 340 345 350
 Arg Thr Tyr Leu Leu Phe Ala Leu Ser Leu Ile Phe Phe Arg Val Gln
 355 360 365
 Ser Leu Ser Asp Ala Trp Tyr Phe Leu Arg Asn Ile Ser Phe Glu Val
 370 375 380
 His Ser Ser Trp Lys Glu Met Asn Ile Gly Ile Arg Asp His Asn Cys
 385 390 395 400
 Ile Val Ala Gly Ser Ala Leu Leu Leu Val Leu Ile Tyr Glu Tyr Tyr
 405 410 415
 Ala Ser Lys Tyr Asn Leu Met Glu Thr Leu Glu Arg Gln Pro Ala Trp
 420 425 430
 Leu Arg Trp Ser Val Tyr Tyr Leu Leu Val Phe Ala Leu Leu Met Leu
 435 440 445
 Gly Lys Phe Asp Thr Glu Thr Phe Ile Tyr Leu Gln Phe
 450 455 460

<210> 9683
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 9683
 Leu Thr Thr Thr Thr Lys Asn Lys Glu Arg Asn Asn Asn Gly Val Ser
 1 5 10 15
 Thr Asp Met Ala Phe Ser Phe Val Leu Ser Phe Leu Leu Gly Tyr Ala
 20 25 30
 Arg Thr Thr Phe Arg Asn Arg Arg Glu Asn Gln Trp Ile Cys Ser Arg
 35 40 45
 Arg Leu Tyr Ser Leu Pro Arg Thr Leu Glu Arg Asn Gly Ser Asn Asp
 50 55 60
 Leu Phe His Ile
 65

<210> 9684

<211> 382
 <212> PRT
 <213> B.fragilis

<400> 9684

Leu	Val	Ser	Thr	Ser	Val	Trp	Gln	Thr	Val	Tyr	Leu	Met	Phe	Leu
1				5				10					15	
Gln	Ala	Val	Glu	His	Cys	Ser	Lys	Gln	Ser	Lys	Glu	Lys	Phe	Arg
			20					25					30	
Val	Leu	Pro	Leu	Ser	Arg	Asn	Lys	Thr	Glu	Val	Asn	His	Tyr	Lys
		35					40					45		Thr
Glu	Lys	Ala	Thr	Pro	Leu	Gly	Val	Ala	Phe	Phe	Lys	Ser	Arg	Lys
	50					55					60			Trp
Gly	Glu	Ser	Leu	Leu	Phe	Ser	Ile	Leu	Phe	Leu	Phe	Phe	Leu	Ser
65					70				75					80
Cys	Thr	Gly	Lys	Lys	Glu	Lys	His	Ser	Ala	Leu	Pro	Glu	Leu	Gln
				85					90					95
Leu	Thr	Phe	Gly	Leu	Met	Pro	Ser	Phe	Asp	Gly	Leu	Pro	Ser	Leu
			100					105					110	Val
Ala	Val	Arg	Gln	Gly	Ile	Tyr	Asp	Ser	Leu	Asp	Ile	Lys	Ile	Asp
		115					120					125		Phe
Ile	Thr	Tyr	Ala	Ser	Ala	Thr	Asp	Arg	Asp	Ala	Ala	Phe	Leu	Ser
	130						135				140			Gly
Lys	Leu	Asp	Gly	Met	Leu	Thr	Asp	Tyr	Pro	Gly	Ala	Thr	Leu	Leu
145					150					155				Gln
Ala	Lys	Gly	Ser	Arg	Leu	Arg	Leu	Val	Met	Glu	Thr	Asp	Gly	Ser
				165					170					175
Ser	Met	Ile	Ala	Ser	Lys	Lys	Ser	Asn	Val	Arg	Asn	Pro	Asp	Asp
			180					185				190		Leu
Lys	Gly	Lys	Asn	Ile	Ser	Val	Ser	Ala	Asn	Thr	Phe	Val	Glu	Tyr
		195					200					205		Ala
Thr	Asp	Glu	Val	Met	Lys	Arg	Ala	Cys	Leu	His	Pro	Gly	Glu	Val
	210					215					220			Asn
Lys	Pro	Glu	Ile	Asn	Asn	Ile	Pro	Leu	Arg	Leu	Met	Met	Leu	Glu
225					230					235				Asp
Gly	Gln	Ile	Ser	Ala	Ser	Phe	Leu	Pro	Gly	Pro	Ala	Ser	Ala	Ile
				245					250					255
Leu	Asn	Asp	Gly	His	Thr	Ala	Leu	Leu	Asn	Thr	Arg	Gln	Met	Gly
			260					265					270	Leu
Arg	Cys	Thr	Gly	Ile	Val	Phe	Ser	Glu	Lys	Ala	Ile	Thr	Glu	Lys
		275					280					285		Asp
Glu	Glu	Ile	Arg	Arg	Phe	Ile	Thr	Gly	Tyr	Asn	Leu	Gly	Val	Lys
	290					295					300			Tyr
Leu	Gln	Thr	Arg	Pro	Gln	Asn	Glu	Trp	Thr	Glu	Ile	Leu	Val	Lys
305					310					315				Glu
Phe	Gly	Leu	Gln	Glu	Lys	Ala	Ala	Met	Gln	Ile	Asp	Leu	Pro	Asp
				325					330					335
Arg	Pro	Ala	Thr	Arg	Pro	Ser	Tyr	His	Asp	Ile	Glu	Lys	Ile	Ile
			340					345					350	Ala
Trp	Leu	Lys	Ser	Lys	Gly	Ala	Ile	Pro	Asp	Tyr	Tyr	Pro	Gly	Glu
		355					360						365	Asn
Leu	Val	Asp	Thr	Thr	Phe	Ile	Pro	Gly	Thr	Leu	Lys	Pro	Gln	
	370					375					380			

<210> 9685
 <211> 455
 <212> PRT
 <213> B.fragilis

<400> 9685

Phe	Leu	Gln	Thr	Leu	Asn	Cys	Ile	Asp	Met	Ala	Asp	Trp	Lys	Ser	Val
1				5					10					15	
Lys	Ser	Ile	Ser	Asp	Lys	Tyr	Gly	Ile	Ser	Val	Glu	Arg	Val	Ile	Ala
			20					25					30		
Trp	Val	Arg	Glu	Ser	Gln	Ile	Thr	Thr	Ser	Val	Val	Gly	Ser	Val	Val
		35					40					45			
Leu	Ile	Asp	Asp	Gly	Ser	Val	Cys	Glu	Leu	Val	Glu	Lys	Glu	Lys	Arg
	50					55					60				
Leu	Ala	His	Leu	Lys	Thr	Asn	Tyr	Glu	Gln	Leu	Cys	Ala	Lys	Phe	Glu
65					70					75					80
Gln	Arg	Ile	Glu	Ala	Glu	Leu	Arg	Ala	Asp	Glu	Asp	Ala	Gly	Leu	Lys
				85					90					95	
Met	Arg	Leu	Leu	Asp	Asp	Phe	Leu	Pro	Val	Leu	His	Arg	Leu	Leu	Cys
			100					105					110		
Val	Met	Ile	Asp	Lys	Leu	Asn	Thr	Glu	Asp	Arg	Lys	Leu	Phe	Asn	Ser
		115					120					125			
Ala	Phe	Thr	Ala	Ala	Pro	Leu	Tyr	Arg	Ile	Ala	Arg	Glu	Met	Gly	Phe
	130					135					140				
Glu	Ser	Val	Lys	Asp	Tyr	Leu	Ile	Ala	Tyr	Arg	Lys	Val	Thr	Arg	Arg
145					150					155					160
Leu	Pro	Glu	Ser	Ser	Asp	Glu	Leu	Ile	Lys	Arg	Leu	Gln	Thr	Asp	Leu
				165					170					175	
Glu	Arg	Ser	Arg	Asp	Ser	Phe	Lys	Glu	Met	Glu	His	Thr	Leu	Leu	Arg
			180					185					190		
Ala	Arg	Gln	Asn	His	Glu	Asp	Ala	Asn	Arg	Met	Cys	Ser	Asp	Leu	Arg
		195					200					205			
Asp	Lys	Glu	Ile	Tyr	Tyr	Ile	Glu	Arg	Cys	Glu	Arg	Leu	Lys	Glu	Lys
	210					215					220				
Asn	Arg	Glu	Asn	Glu	Lys	Arg	Val	Glu	Arg	Leu	Lys	Lys	Arg	Leu	Leu
225					230					235					240
Lys	Trp	Glu	Lys	Cys	Pro	Asn	Val	Gly	Glu	Ala	Gly	Asn	Thr	Gly	Glu
				245					250					255	
Asp	Glu	Ser	Leu	Gln	Glu	Leu	Ser	Asp	Glu	Val	Gly	Asn	Leu	His	Ile
		260						265					270		
Arg	Glu	Met	Glu	Leu	Arg	Ala	Gln	Arg	Arg	Glu	Leu	Ile	Thr	Arg	Val
	275						280						285		
Ala	Arg	Leu	Glu	Arg	Glu	Met	Tyr	Lys	Tyr	Asn	Ser	Thr	Glu	Asn	Ser
	290					295					300				
Phe	Lys	Ser	Arg	Leu	Gly	Glu	Lys	Gly	Ala	Trp	Arg	Lys	Ile	Glu	Ser
305				310					315					320	
Glu	Phe	Glu	Arg	Cys	Ala	Arg	Thr	Tyr	Phe	Gly	Arg	Asp	Val	Glu	Val
				325					330					335	
Val	Ser	Arg	Lys	Glu	Ala	Gln	Glu	Ile	Arg	Gln	Leu	Gln	Ile	Lys	Ala
			340					345					350		
Leu	Val	Asp	Glu	Asn	Tyr	Ala	Gln	Ser	Gly	Ala	Trp	Lys	Glu	Met	Met
		355					360					365			
Ala	Ala	Thr	Glu	Ala	Lys	Phe	Ala	Met	Ser	Gly	Glu	Thr	Met	Pro	Asp
	370					375					380				
Ala	Gly	Lys	Leu	Glu	Asn	Glu	Glu	Val	Glu	Thr	Gly	Thr	Glu	Pro	Ala
385					390					395					400
Ala	Lys	Asp	Glu	Val	Glu	Met	Ile	Ile	Glu	Gly	Ile	Ala	Ser	Leu	Asp
				405					410					415	
Glu	Met	Gly	Ala	Ser	Leu	Asp	Arg	Tyr	Lys	Lys	Glu	Thr	Ser	Glu	Met
			420					425					430		
Ile	Glu	Lys	Tyr	Lys	Ala	Asn	Glu	Glu	Lys	Thr	Glu	Gly	Phe	Trp	Asn
		435					440					445			
Arg	Leu	Arg	Ser	Met	Phe	Cys									
	450					455									

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<210> 9686
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 <212> PRT
 <213> B.fragilis

<400> 9686

Asn	Met	Lys	Thr	Ile	Lys	Phe	Lys	Tyr	Leu	Leu	Pro	Cys	Ala	Leu	Leu
1				5					10					15	
Gly	Met	Met	Leu	Gly	Val	Ala	Ser	Cys	Val	Asn	Asp	Leu	Asn	Thr	Val
			20					25					30		
Pro	Leu	Asp	Lys	Asp	Glu	Leu	Val	Ser	Asp	Val	Val	Phe	Gly	Asn	Glu
		35					40					45			
Pro	Leu	Ala	Tyr	Glu	Gln	Ser	Leu	Ala	Lys	Ile	Tyr	Ala	Gly	Met	Ala
	50					55				60					
Ile	Gly	Gly	Asn	Ser	Gly	Gly	Asp	Ser	Asp	Gln	Asp	Val	Val	Gly	Ile
65					70					75					80
Asp	Gly	Gly	Ser	Gln	Ala	Ser	Phe	Leu	Arg	Val	Leu	Trp	Asn	Met	Gln
			85					90						95	
Asp	Leu	Pro	Ser	Asp	Ile	Ala	His	Cys	Ala	Trp	Asn	Asp	Pro	Gly	Ile
			100					105					110		
Pro	Glu	Phe	Asn	His	Ile	Ser	Trp	Gly	Ala	Ser	Ser	Pro	Trp	Ile	Lys
		115					120					125			
Gly	Ser	Tyr	Tyr	Arg	Leu	Phe	Tyr	Gln	Ile	Asn	Val	Ala	Asn	Ala	Tyr
	130					135					140				
Leu	Arg	Glu	Thr	Thr	Glu	Asp	Lys	Leu	Asp	Ala	Arg	Gly	Cys	Asp	Ala
145					150					155					160
Ser	Leu	Lys	Ala	Ser	Ile	Lys	Thr	Trp	Arg	Ala	Glu	Ala	Arg	Phe	Leu
				165				170						175	
Arg	Ala	Leu	Ser	Tyr	Glu	Tyr	Ala	Leu	Asp	Leu	Tyr	Arg	Asn	Val	Pro
			180					185					190		
Phe	Val	Asp	Glu	Asn	Ser	Pro	Ile	Gly	Ser	Ile	Pro	Pro	Lys	Gln	Ile
		195				200					205				
Met	Ala	Ala	Asp	Leu	Phe	Asn	Trp	Ile	Glu	Lys	Glu	Leu	Thr	Glu	Cys
	210					215					220				
Val	Glu	Asp	Met	Leu	Glu	Pro	Thr	Val	Gly	Tyr	Ser	Gln	Asp	Tyr	Gly
225					230					235					240
His	Ala	Asn	Lys	Ala	Ala	Ala	Trp	Ala	Leu	Leu	Ser	Arg	Leu	Tyr	Leu
				245					250					255	
Asn	Ala	Glu	Thr	Tyr	Val	Gly	Gln	Asn	Lys	Tyr	Thr	Glu	Cys	Ile	Thr
			260					265					270		
Tyr	Ala	Lys	Lys	Val	Ile	Glu	Thr	Gly	Tyr	Gln	Leu	Glu	Pro	Val	Tyr
		275					280					285			
Val	Asp	Met	Phe	Lys	Ala	Asp	Asn	His	Leu	Ser	Asn	Glu	Met	Ile	Phe
	290					295					300				
Pro	Val	Arg	Tyr	Glu	Gly	Asp	Gln	Thr	Met	Thr	Trp	Gly	Gly	Met	Thr
305					310						315				320
Ala	Phe	Leu	Cys	Trp	Gly	Ala	Thr	Ala	Thr	Gln	Glu	Glu	Val	Asn	Ala
				325					330					335	
Lys	Gly	Ala	Trp	Gln	Gly	Val	Arg	Ala	Lys	Ser	Ser	Leu	Tyr	Asn	Leu
			340					345					350		
Phe	Leu	Lys	Glu	Ser	Gly	Ser	Asp	Ala	Asp	Thr	Arg	Lys	Ala	Met	Leu
		355					360					365			
Arg	Thr	Asp	Leu	Thr	Thr	Ser	Leu	Glu	Ile	Ile	Asp	Glu	Asn	Thr	Phe
	370					375					380				
Gln	Asn	Ile	Gly	Ile	Pro	Val	Thr	Lys	Tyr	Phe	Asn	Val	Asn	Lys	Asp
385					390					395					400
Gly	Thr	Leu	Pro	Pro	Ser	Lys	Glu	Ala	Tyr	Val	Asp	Phe	Pro	Leu	Phe
				405					410					415	

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Arg Leu Gly Glu Ile Tyr Leu Thr Tyr Ala Glu Ala Val Leu Arg Gly
 420 425 430
 Gly Gln Gly Gly Asp Arg Ala Thr Ala Leu Arg Tyr Val Asn Asp Leu
 435 440 445
 Arg Lys Arg Ala Tyr Ser Asp Lys Thr Leu Ala Pro Ile Ser Asp Ser
 450 455 460
 Asp Leu Thr Leu Asn Phe Ile Ile Asp Glu Arg Gly Arg Glu Phe Phe
 465 470 475 480
 Phe Glu Gly Gln Arg Thr Asp Leu Val Arg Phe Gly Leu Phe Thr
 485 490 495
 Thr Ala Gly Tyr Val Trp Pro Trp Lys Gly Gly Thr Ala Lys Gly Lys
 500 505 510
 Ala Val Glu Asn Phe Tyr Asn Val Phe Pro Ile Pro Ser Asp Asp Ile
 515 520 525
 Gly Ser Asn Thr Asn Leu Lys Gln Asn Glu Gly Tyr
 530 535 540

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<400> 9687
 Arg Leu Arg Thr Phe Ile Cys Phe Gly Ala Ala Asn Ile Met Tyr Tyr
 1 5 10 15
 Ser Glu Ile Ile Ala Met Phe Ala Glu Ile Ile Asn Leu Lys Ile Lys
 20 25 30
 Asn Met Leu Ile Tyr Asn Thr Thr Phe Gln Val Asp Asp Glu Val His
 35 40 45
 Asp Asn Phe Leu Ile Trp Ile Lys Glu Ser Tyr Ile Pro Glu Val Glu
 50 55 60
 Lys His Gly Ala Leu Arg Ala Pro Arg Ile Cys Arg Val Leu Ser His
 65 70 75 80
 Arg Asp Glu Gly Thr Ser Tyr Ser Leu Gln Trp Glu Val Asp Asp Ser
 85 90 95
 Gly Val Leu His Arg Trp His Gln Asp Gln Gly Ala Arg Leu Asn Gln
 100 105 110
 Glu Leu Val Lys Ile Phe Lys Asp Lys Val Val Gly Phe Pro Thr Leu
 115 120 125
 Met Glu Val Leu Glu
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 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 9688
 Lys Asn Thr Thr Met Thr Asn Asn Glu Ser Glu Arg Glu Leu Val Leu
 1 5 10 15
 Gln Thr Leu Arg Thr Trp Met Ala Phe Arg Gln Ala Val Gln Arg Val
 20 25 30
 Leu Lys Arg His Asn Val Asp Met Thr Phe Glu Met Leu Gln Val Met
 35 40 45
 Asn Cys Leu Trp Asn Lys Gln Gly Ile Ser Gln Gln Ser Leu Ala Glu
 50 55 60
 Lys Thr Ala Lys Asp Lys Ala Cys Leu Thr Asn Leu Ile Asn Asn Leu
 65 70 75 80
 Glu Lys Lys Asn Trp Val Ile Arg Lys Glu Gly Pro Ser Asp Arg Arg

				85					90					95					
Asn	Arg	Leu	Ile	Phe	Leu	Thr	Pro	Gln	Gly	Glu	Glu	Leu	Ala	Leu	Thr				
			100					105					110						
Val	Lys	Pro	Leu	Ile	Asn	Asp	Ile	Tyr	Ala	Gln	Thr	Gly	Ala	Glu	Met				
		115					120					125							
Glu	Ala	Ser	Arg	Ile	Thr	Glu	Cys	Ile	Glu	Asp	Leu	Lys	Arg	Leu	His				
	130					135					140								
Glu	Val	Leu	Asn	Glu	Ile														
145					150														

<210> 9689

<211> 359

<212> PRT

<213> B.fragilis

<400> 9689

Lys	Lys	Ser	Ala	Met	Ser	Thr	Arg	Gln	Ile	Lys	Leu	Lys	Gln	Leu	Arg				
1				5				10					15						
Arg	Leu	Lys	Phe	Arg	Asn	Ile	Phe	Leu	Asn	Thr	Val	Cys	Ile	Leu	Leu				
			20					25					30						
Ala	Leu	Ala	Gly	Ile	Ser	Trp	Thr	Val	Asn	Tyr	Phe	Trp	Lys	Tyr	Ala				
		35					40					45							
Arg	Tyr	Glu	Ile	Thr	Asn	Asp	Ala	Val	Val	Asp	Gln	Tyr	Ile	Ala	Pro				
	50					55					60								
Leu	Asn	Ile	Arg	Ile	Pro	Gly	Tyr	Ile	Lys	Glu	Val	Arg	Phe	Thr	Glu				
	65				70					75					80				
His	Gln	Tyr	Val	His	Ala	Gly	Asp	Thr	Leu	Leu	Ile	Leu	Asp	Asp	Arg				
				85					90					95					
Glu	Tyr	Arg	Ile	Arg	Leu	Lys	Asp	Ala	Glu	Ala	Ala	Leu	Met	Asp	Ala				
		100						105					110						
Leu	Gly	Ser	Lys	Glu	Val	Leu	Asn	Ser	Gly	Ile	Arg	Thr	Ser	Gly	Val				
		115					120					125							
Asn	Val	Ala	Val	Gln	Glu	Ala	Asn	Ile	Ala	Glu	Thr	Leu	Ala	His	Leu				
	130					135					140								
Ser	Gln	Gln	Glu	Ala	Glu	Leu	Asn	Arg	Tyr	Thr	Arg	Leu	Leu	Lys	Lys				
	145				150					155					160				
Gln	Ala	Val	Ser	Gln	Gln	Asp	Tyr	Glu	Leu	Ala	Lys	Ala	Asn	Phe	Glu				
			165					170						175					
Ala	Thr	Arg	Ala	Arg	Tyr	Asn	Ala	Leu	Leu	Arg	Gln	Lys	Glu	Ala	Ala				
			180					185					190						
Gln	Ser	Gln	Tyr	Ser	Glu	Thr	Ser	Lys	Arg	Ser	Thr	Gly	Ala	Glu	Ala				
		195					200					205							
Asn	Ile	Leu	Arg	Lys	Glu	Ala	Asp	Leu	Glu	Met	Ala	Arg	Leu	Asn	Leu				
	210					215					220								
Ser	Tyr	Thr	Val	Val	Thr	Ala	Pro	Tyr	Asp	Gly	Tyr	Thr	Gly	Arg	Arg				
	225				230					235					240				
Thr	Leu	Glu	Pro	Gly	Gln	Phe	Val	Gln	Gly	Gly	Gln	Thr	Leu	Ser	Tyr				
			245						250					255					
Leu	Val	Arg	Gly	Asn	Asp	Lys	Trp	Val	Thr	Ala	Asn	Tyr	Lys	Glu	Thr				
		260						265					270						
Gln	Ile	Ala	His	Ile	Tyr	Ile	Gly	Gln	Lys	Val	Arg	Ile	Lys	Val	Asp				
	275						280					285							
Ala	Phe	Ser	Gly	Arg	Thr	Phe	His	Gly	Thr	Val	Thr	Ala	Ile	Ser	Glu				
	290					295					300								
Ala	Thr	Gly	Ser	Lys	Tyr	Ser	Leu	Val	Pro	Thr	Asp	Asn	Ser	Ala	Gly				
	305			310						315				320					
Asn	Phe	Val	Lys	Val	Gln	Gln	Arg	Ile	Pro	Val	Arg	Ile	Asp	Leu	Asn				
			325						330				335						
Asp	Ala	Ser	Pro	Glu	Glu	Met	Glu	Cys	Leu	Arg	Ala	Gly	Met	Met	Val				

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Glu Thr Glu Ala Val Arg Pro
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345

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<211> 431
<212> PRT
<213> B.fragilis

<400> 9690

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1 5 10 15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
20 25 30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
35 40 45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
50 55 60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65 70 75 80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
85 90 95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
100 105 110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
115 120 125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
130 135 140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
145 150 155 160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
165 170 175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
180 185 190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
195 200 205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
210 215 220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
225 230 235 240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
245 250 255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
260 265 270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
275 280 285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
290 295 300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
305 310 315 320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
325 330 335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
340 345 350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
355 360 365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
370 375 380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val

385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 9691
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 9691
 Ser Tyr Leu Leu Thr Phe Thr Arg Gly Pro Tyr Gly Ser Met Lys Val
 1 5 10 15
 Ser Pro Thr Phe Ser Pro Thr Leu Lys Thr Phe His Gln Arg Leu Leu
 20 25 30
 Ala Asp Phe Gly Asp Ala Ile Thr Thr Asp Arg Thr Gly Met Gln Phe
 35 40 45
 Met Ile Gly Thr Thr Thr Val Thr Arg Tyr Asp Lys Lys Glu Ile His
 50 55 60

<210> 9692
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 9692
 Gly Phe Pro Tyr Lys Ser Ile Tyr Cys Phe Trp Lys Ala Val Phe Tyr
 1 5 10 15
 Phe Asp Ala Ser Val Gly Glu Gly Phe Gly Arg Ile Ile Ser Met Ile
 20 25 30
 Ser Phe Ser Met Pro Glu Trp Cys Met Ala Tyr Pro Phe Gln Tyr Phe
 35 40 45
 Ser Ile Arg Pro Leu Gly Ala Ile Asn Ile Lys Gln Gly Met Asp Phe
 50 55 60
 Ile Pro
 65

<210> 9693
 <211> 190
 <212> PRT
 <213> B.fragilis

<400> 9693
 Leu Ala Val Tyr Ser Asn Asn Ala Lys Tyr Arg Tyr Met Glu Asn Phe
 1 5 10 15
 Ser Glu Leu Ile Lys Asn Arg Arg Ser Met Arg Lys Phe Thr Gly Glu
 20 25 30
 Glu Leu Ser Gln Glu Asp Val Val Ala Leu Leu Lys Ala Ala Leu Met
 35 40 45
 Ala Pro Thr Ser Lys Arg Ser Asn Ser Trp Gln Phe Ile Ala Val Asp
 50 55 60
 Asp Lys Lys Leu Leu Ser Glu Leu Ser His Cys Lys Glu Gln Ala Ser
 65 70 75 80
 Ala Phe Ile Ala Asp Ala Ala Leu Ala Ile Val Val Thr Ala Asp Pro
 85 90 95
 Leu Ala Ser Asp Val Trp Ile Glu Asp Ala Ser Ile Ala Ser Ile Met
 100 105 110
 Ile Gln Leu Gln Ala Glu Asp Leu Gly Leu Gly Ser Cys Trp Val Gln

115	120	125
Val Arg Glu Arg Tyr Thr	Ala Thr Gly Ile Pro Ser	Asp Glu Phe Val
130	135	140
His Gly Val Leu Asp Ile	Pro Leu Gln Leu Gln	Val Leu Ser Val Ile
145	150	155
Ala Ile Gly His Lys Gly	Met Glu Arg Lys Pro	Phe Asn Glu Asp His
165	170	175
Leu Gln Trp Glu Lys Ile	His Ile Asn Lys Phe	Gly Gly Lys
180	185	190

<210> 9694
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 <212> PRT
 <213> B.fragilis

<400> 9694

Ser Met Lys Tyr Leu Thr	Phe Pro Phe Leu Phe Leu Leu Leu	Pro Leu
1	5	10
Ile Gly Phe Gly Cys Ser	Ser Ser Glu Glu Lys Glu Thr	Asp Ser Leu Ile
20	25	30
Leu Ser Ser Asp Ser Glu	Ile Phe Glu Gln Gly Ile	Asp Phe Ala
35	40	45
Ala Thr Ser Gly Thr Arg	Asn Leu Ser Phe Ser Ser	Gly Arg Pro Trp
50	55	60
Arg Ile Ser Leu Thr Thr	Asp Thr Arg Arg Ala Ala	Asp Trp
65	70	75
Cys Thr Val Ser Pro Phe	Ser Gly Thr Ala Gly Asp	Ala Ser Val Thr
85	90	95
Ile Ser Ile Gln Glu Asn	Ala Asp Tyr Asp Ser Arg	Ser Val Lys Leu
100	105	110
Thr Leu Val Ala Gly Gly	Ile Glu Lys Ser Phe Thr	Val Ser Gln Lys
115	120	125
Gln Lys Asp Ala Leu Thr	Leu Thr Ala Ser Arg	Phe Glu Val Gly Lys
130	135	140
Glu Gly Gly Thr Val Gln	Val Glu Val Lys Ala Asn	Ile Thr Phe Glu
145	150	155
Val Glu Ile Pro Glu Val	Asp Arg Ser Trp Ile Ser	Gln Ala Asn Thr
165	170	175
Arg Gly Leu Val Thr Asn	Leu Ala Phe Thr Val	Ala Pro Asn Glu
180	185	190
Gly Val Ala Gly Arg Glu	Gly Glu Ile Val Ile Arg	Ser Gly Ser Leu
195	200	205
Ser Glu Lys Ile Arg Ile	Thr Gln Glu Gly Arg Cys	Asp Asp Gly Leu
210	215	220
Ser Phe Arg Pro Glu Thr	Pro Asp Ala Asp Arg Gln	Leu Thr Leu Tyr
225	230	235
Phe Lys Ala Thr Lys Thr	Ser Pro Leu Tyr Gly Tyr	Ala Gly Asp Val
245	250	255
Tyr Val His Thr Gly Val	Val Ser Glu Gly Thr Trp	Met Tyr Val Pro
260	265	270
Ala Glu Trp Asn Thr Asn	Val Asp Lys Cys Lys Met	Val Arg Val Ala
275	280	285
Asp Asn Ile Trp Ser Ile	Thr Leu Ala Pro Ser Ile	Arg Gln Trp Phe
290	295	300
Gly Ser Asn Glu Thr Pro	Val Arg Gln Leu Gly Val	Val Ile Arg Ser
305	310	315
Ala Asp Gly Ser Lys Lys	Gly Met Asp Gly Asp Ser	Phe Val Ser Val
325	330	335
Thr Asp His Leu Tyr Lys	Pro Phe Glu Pro Ala	Ala Val Arg Tyr Ala

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335

Ser	Met	Pro	Gly	Gly	Leu	Gln	Glu	Gly	Ile	Asn	Leu	Ile	Asp	Ala	Ser
		355					360					365			
Thr	Val	Thr	Leu	Val	Leu	Tyr	Asp	Lys	Asp	Lys	Lys	Gly	Gly	His	Lys
		370				375					380				
Asp	Phe	Ala	His	Val	Val	Gly	Asp	Phe	Asn	Asp	Trp	Lys	Leu	Ser	Asn
385					390					395					400
Glu	Ser	Asn	Ser	Gln	Met	Asn	Arg	Asp	Asp	Ala	Ala	Gly	Cys	Trp	Trp
				405				410						415	
Ile	Thr	Leu	Thr	Gly	Leu	Gln	Pro	Thr	Arg	Glu	Tyr	Ala	Phe	Gln	Tyr
			420					425					430		
Tyr	Val	Gly	Thr	Arg	Ala	Gly	Glu	Ile	Leu	Arg	Leu	Ala	Asp	Ala	Tyr
		435					440					445			
Ser	Arg	Lys	Ile	Leu	Asp	Pro	Asp	Asn	Asp	Lys	Tyr	Ile	Pro	Ser	Ser
		450				455					460				
Thr	Tyr	Pro	Asp	Ala	Lys	Glu	Tyr	Pro	Lys	Gly	Ala	Val	Gly	Ile	Ala
465					470					475					480
Ser	Val	Phe	Lys	Ile	Gln	Arg	Asp	Ser	Tyr	Glu	Trp	Lys	Val	Lys	Asn
				485				490						495	
Phe	Arg	Ile	Leu	Asp	Lys	Asn	Asn	Leu	Met	Ile	Tyr	Glu	Leu	Leu	Leu
			500					505					510		
Arg	Asp	Phe	Thr	Ala	Thr	Gly	Asp	Leu	Asn	Gly	Ala	Met	Glu	Lys	Ile
		515					520					525			
Gly	Tyr	Leu	Lys	Ser	Leu	Gly	Phe	Asn	Ala	Val	Glu	Leu	Met	Pro	Val
		530				535					540				
Gln	Glu	Phe	Asp	Gly	Asn	Asp	Ser	Trp	Gly	Tyr	Asn	Pro	Cys	Phe	Tyr
545					550					555					560
Phe	Ala	Leu	Asp	Lys	Ala	Tyr	Gly	Thr	Asp	His	Met	Tyr	Lys	Ala	Phe
				565				570						575	
Ile	Asp	Lys	Cys	His	Glu	Ala	Gly	Met	Ala	Val	Leu	Phe	Asp	Val	Val
			580					585					590		
Tyr	Asn	His	Ala	Ser	Gly	Ser	His	Pro	Phe	Ala	Arg	Leu	Tyr	Trp	Asp
		595					600					605			
Thr	Lys	Asn	Asn	Arg	Thr	Ala	Ala	Asp	Asn	Pro	Trp	Phe	Asn	Val	Lys
		610				615					620				
Glu	Pro	His	Pro	Tyr	Gly	Val	Phe	His	Asp	Phe	Asn	His	Asp	Ser	Pro
625					630					635					640
Leu	Val	Arg	Ala	Phe	Val	Lys	Arg	Asn	Leu	Lys	Phe	Leu	Leu	Glu	Glu
				645				650						655	
Tyr	Arg	Ile	Asp	Gly	Phe	Arg	Phe	Asp	Met	Thr	Lys	Gly	Phe	Thr	Gln
			660					665					670		
Asn	Ser	Ser	Thr	Glu	Ala	Thr	Ala	Gly	Ser	Tyr	Asp	Ala	Ser	Arg	Ile
		675					680					685			
Ala	Ile	Leu	Lys	Asp	Tyr	Asn	Glu	Thr	Val	Arg	Glu	Val	Asn	Pro	Glu
		69													

Gln Phe Gly Glu Met Gly Tyr Asp Val Ser Ile Glu Glu Gly Gly Arg
 820 825 830
 Thr Gly Arg Lys Pro Leu His Trp Glu Tyr Leu Asp Asn Glu Ala Arg
 835 840 845
 Lys Gly Leu Cys Asn Thr Tyr Ala Lys Leu Leu Lys Leu Arg Arg Glu
 850 855 860
 His Ser Glu Leu Phe Asn Pro Gly Ser Thr Phe Ser Trp Leu Val Lys
 865 870 875 880
 Thr Ala Asn Trp Thr Gly Gly Arg Phe Leu Thr Leu Ala Ala Thr Asn
 885 890 895
 Gly Lys Arg Leu Val Val Val Gly Asn Phe Thr Ala Lys Pro Ile Glu
 900 905 910
 Ala Ile Thr Ser Phe Pro Val Thr Gly Val Trp Thr Asn Tyr Leu Asp
 915 920 925
 Gly Thr Lys Leu His Val Thr Ser Ile Pro Thr Gly Leu Thr Ile Pro
 930 935 940
 Ala His Glu Cys Arg Val Tyr Ile Asn Phe
 945 950

<210> 9695

<211> 402

<212> PRT

<213> B.fragilis

<400> 9695

Pro Leu Leu Gln Lys Ile Lys Lys Gly Ile Ile Met Glu Tyr Gln Arg
 1 5 10 15
 Ile Trp Leu Leu Val Leu Phe Cys Leu Ser Ser Trp Asp Met His Ala
 20 25 30
 Gln His Phe Val Ile Glu Gly Lys Thr Asn Gly Tyr Val Pro Asp Gly
 35 40 45
 Ser Ile Leu Tyr Leu Gly Arg Trp Asn Gly Met Gly Ala Met Ile Tyr
 50 55 60
 Phe Thr Ser Asp Met Ile Arg Asn Gly Thr Phe Arg Leu Glu Gly Lys
 65 70 75 80
 Arg Glu Lys Thr Pro Asp Ile Ile Tyr Leu Tyr Gly Thr Glu Lys Ala
 85 90 95
 Ile Gly Thr Leu Asn Leu Arg Leu Trp Val Gly Asp Asp Thr Ile Arg
 100 105 110
 Val Ser Ala Asn Ser Glu Val Pro Glu Thr Trp Ile Val Glu Asn Asn
 115 120 125
 Met Pro Gln Gln Ala Glu Glu Asp Phe Tyr Arg Gln Leu Lys Gly Lys
 130 135 140
 Asp Asn Ile Ile Lys Thr Ser Arg Met Asn Ser Arg Gln Leu Trp Asp
 145 150 155 160
 Arg Ser Leu Thr Pro Asp Ser Val Arg Ile Leu Thr Asn Gln Ile Ile
 165 170 175
 Gln Asn Asp Leu Pro Gly Gln Ile Arg Ile Leu Ser His Leu His Lys
 180 185 190
 Gln Pro Lys Leu Thr Asp Thr Gly Leu Val Tyr Phe Phe Leu Ser Ser
 195 200 205
 Gly Tyr Ala His Trp Met Thr Asn Pro Lys His Leu Cys Met Gly Arg
 210 215 220
 Glu Ile Tyr Gly Gln Leu Thr Gly Lys Gln Lys Thr Tyr Tyr Gly
 225 230 235 240
 Lys Phe Ala Lys Ser Tyr Phe Tyr Pro Asp Lys Thr Pro Glu Lys Gly
 245 250 255
 Asp Tyr Tyr Ile Asp Ala Asn Leu Phe Asp Leu Lys Gly Asp Ser Cys
 260 265 270

Lys Leu Thr Asp Tyr Leu Asn Lys Gly Lys Tyr Ile Leu Leu Asp Phe
 275 280 285
 Trp Asp Leu Tyr Cys Ala Pro Cys Lys Lys Ser Val Pro Gly Leu Lys
 290 295 300
 Glu Leu Phe Ser Ser Cys Ala Asp Lys Leu Thr Ile Ile Ser Ile Asn
 305 310 315 320
 Val Gly Ser Arg Glu Ser Gln Val Lys Gly Ser Ser Asp Phe Leu Trp
 325 330 335
 Glu Asn Leu Ser Asp Gly Gln Gly Leu Thr Gly Ile Ala Ser Arg Tyr
 340 345 350
 Gly Ile Lys Ser Ile Pro Cys Phe Ile Leu Ile Ala Pro Asn Gly Arg
 355 360 365
 Ile Glu Lys Tyr Trp Lys Gly Tyr Ala Met His His Ser Gly Met Glu
 370 375 380
 Lys Glu Ile Met Glu Ile Ile Leu Pro Asn Pro Ser Pro Thr Glu Ala
 385 390 395 400
 Ser Lys

<210> 9696

<211> 337

<212> PRT

<213> B.fragilis

<400> 9696

Ser Ile Lys His Thr Met Ser Asp Ala Tyr Lys Ile Ile His Asn Phe
 1 5 10 15
 Met Ala Phe Ile Ala Ser Pro Asp Leu Lys Asn Lys Val Trp Thr Trp
 20 25 30
 Leu Leu Asp Pro Ser Gly Lys Gln Arg Lys Glu Glu Ala Leu Leu Gln
 35 40 45
 Ile Trp Asp Glu Tyr Arg Pro Glu Ala Asp Ala Gly Thr Arg His Ser
 50 55 60
 Leu Arg Lys Phe Gln Lys Arg Ala Gly Leu Ser Ser Ala Arg Pro Ala
 65 70 75 80
 Tyr Leu His Arg Trp Ala His Ile Ala Ala Ile Leu Leu Ile Pro Leu
 85 90 95
 Ile Ser Ile Ile Thr Ala Tyr Ile Tyr Val Glu His His Thr Gln Glu
 100 105 110
 Val Arg Phe Val Glu Cys Ile Val Pro Lys Gly Glu Gln Lys Gln Ile
 115 120 125
 Thr Leu Pro Asp Gly Ser Ile Ile Thr Leu Asn Ser Gly Ser Val Phe
 130 135 140
 Leu Tyr Pro Thr Gln Phe Ala Gly Asp Thr Arg Ser Val Tyr Leu Ser
 145 150 155 160
 Gly Glu Gly His Phe Ala Val Ala Pro Asn Lys Lys Leu Pro Phe Val
 165 170 175
 Val Ala Thr Asn His Leu Asp Ile Cys Val Leu Gly Thr Gln Phe Asn
 180 185 190
 Leu Gln Ala Tyr Pro Phe Asp Arg Arg Thr Ile Thr Thr Leu Glu Ser
 195 200 205
 Gly Ser Val Ala Val Arg Lys Lys Asn Gln Pro Asn Ser Phe Ile Thr
 210 215 220
 Leu Glu Pro Asn Gln Gln Leu Asp Tyr Glu Asn Arg Ser Gly Arg Phe
 225 230 235 240
 Asn Lys Thr Asp Ile Asp Ala Ser Val Tyr Ser Gly Trp Thr Lys Gly
 245 250 255
 Glu Met Asn Phe Ile Ser Gln Ser Leu Arg Glu Ile Leu Arg Thr Leu
 260 265 270

Glu Arg Ser Tyr Ala Val Ser Ile Gln Leu Ser Ser Asp Leu Met Glu
 275 280 285
 Ser Asn Arg Ile Asn Ser Asp Leu Tyr Thr Ile Lys Phe Lys Arg Arg
 290 295 300
 Asp Asp Ile Phe His Val Leu Asp Ile Val Thr Lys Thr Val Gly Gly
 305 310 315 320
 Ile Thr Tyr Lys Val Glu Lys Asp Glu Ser Ile Ser Ile Cys Pro Leu
 325 330 335
 Lys

<210> 9697
 <211> 397
 <212> PRT
 <213> B.fragilis

<400> 9697

Pro Met Glu His Lys Ile Ser Glu Pro Asn Ala Arg Val Asp Val Ala
 1 5 10 15
 Asp Val Leu Arg Gly Leu Ala Val Met Gly Ile Ile Ile Leu His Ser
 20 25 30
 Ile Glu His Phe Asn Phe Tyr Ser Phe Pro Asp Thr Val Pro Cys Glu
 35 40 45
 Trp Met Lys Phe Thr Asp Lys Val Ile Trp Asn Gly Leu Phe Phe Val
 50 55 60
 Phe Ser Asn Lys Ala Tyr Ala Ile Phe Ala Leu Leu Phe Gly Phe Ser
 65 70 75 80
 Phe Tyr Ile Gln Asp Asn Asn Gln Gln Arg Arg Gly Lys Asp Phe Arg
 85 90 95
 Leu Arg Phe Ile Trp Arg Met Ala Leu Leu Phe Ile Ile Gly Gln Phe
 100 105 110
 Asn Ala Ala Phe Phe Thr Gly Glu Ile Leu Thr Met Tyr Ala Met Leu
 115 120 125
 Gly Leu Ile Leu Pro Leu Ser Cys Arg Leu Ser Asp Arg Ser Ile Ala
 130 135 140
 Ile Phe Ala Thr Leu Leu Ile Ile Gln Pro Ile Asp Trp Cys Lys Val
 145 150 155 160
 Ile Tyr Ala Leu Cys Asn Pro Asp Tyr Val Ala Gly Pro Gly Leu Ala
 165 170 175
 Ser His Tyr Phe Gly Ile Ala Phe Asp Val Gln Lys Asn Gly Thr Phe
 180 185 190
 Leu Glu Thr Ile Arg Met Asn Leu Trp Glu Gly Gln Leu Ala Asn Leu
 195 200 205
 Thr Trp Ala Leu Glu His Gly Arg Ile Leu Gln Thr Pro Ala Leu Phe
 210 215 220
 Leu Phe Gly Met Leu Val Gly Arg Lys Gly Leu Phe Leu Tyr Ser Glu
 225 230 235 240
 Gln Asn Glu Gln His Trp Leu Lys Ala Leu Gly Ile Ser Leu Ile Cys
 245 250 255
 Phe Phe Pro Leu Tyr Gly Leu Asn Asn Met Leu Pro Glu Phe Ile Thr
 260 265 270
 Arg Asn Ala Ile Arg Val Pro Leu Gln Leu Ile Ile Ser Ser Leu Ser
 275 280 285
 Asn Leu Ser Phe Met Val Leu Leu Val Ser Gly Leu Leu Ile Thr Phe
 290 295 300
 Tyr Arg Ile Lys Asp Arg Phe Leu Met Arg Phe Thr Ser Tyr Gly
 305 310 315 320
 Lys Met Ser Leu Thr Asn Tyr Ile Gly Gln Ser Val Ile Gly Ser Leu
 325 330 335

Leu Phe Tyr His Trp Gly Phe Glu Leu Gly Arg Phe Leu Gly Ile Thr
 340 345 350
 Tyr Ser Phe Phe Phe Gly Ile Leu Phe Val Leu Leu Gln Met Ala Phe
 355 360 365
 Cys Ser Trp Trp Leu Ser His Phe Lys His Gly Pro Phe Glu Gly Leu
 370 375 380
 Trp Lys Arg Leu Thr Trp Ile Gly Asn Asn Lys Arg Lys
 385 390 395

<210> 9698

<211> 421

<212> PRT

<213> B.fragilis

<400> 9698

Ser Ile Met Gln Thr Ile Asp Asn Phe Asn Phe Ala Gly Lys Lys Ala
 1 5 10 15
 Phe Val Arg Val Asp Phe Asn Val Pro Leu Asp Glu Asn Phe Asn Ile
 20 25 30
 Thr Asp Asp Thr Arg Ile Arg Ala Leu Pro Thr Leu Lys Lys Ile
 35 40 45
 Leu Ala Asp Gly Gly Ser Ile Ile Gly Ser His Leu Gly Arg Pro
 50 55 60
 Lys Gly Val Ala Asp Lys Phe Ser Leu Lys His Ile Val Lys His Val
 65 70 75 80
 Ser Glu Leu Leu Gly Val Glu Val Gln Phe Ala Asn Asp Cys Met Gly
 85 90 95
 Glu Glu Ala Ala Val Lys Ala Ala Ala Leu Gln Pro Gly Glu Val Leu
 100 105 110
 Leu Leu Glu Asn Leu Arg Phe Tyr Ala Glu Glu Glu Gly Lys Pro Arg
 115 120 125
 Gly Leu Ala Glu Asp Ala Thr Asp Glu Glu Lys Ala Ala Ala Lys Lys
 130 135 140
 Ala Val Lys Glu Ser Gln Lys Glu Phe Thr Lys Lys Leu Ala Ser Tyr
 145 150 155 160
 Ala Asp Cys Tyr Val Asn Asp Ala Phe Gly Thr Ala His Arg Ala His
 165 170 175
 Ala Ser Thr Ala Leu Ile Ala Lys Tyr Phe Asp Thr Asn Asn Lys Met
 180 185 190
 Phe Gly Tyr Leu Met Glu Lys Glu Val Lys Ala Val Asp Lys Ile Leu
 195 200 205
 Asn Asp Ile Lys Arg Pro Phe Thr Ala Ile Met Gly Gly Ser Lys Val
 210 215 220
 Ser Ser Lys Ile Glu Ile Ile Glu Asn Leu Leu Asn Lys Val Asp Asn
 225 230 235 240
 Leu Ile Ile Thr Gly Gly Met Thr Tyr Thr Phe Thr Lys Ala Met Gly
 245 250 255
 Gly Gln Ile Gly Leu Ser Ile Cys Glu Asp Asp Lys Leu Asp Leu Ala
 260 265 270
 Arg Glu Leu Met Gln Lys Ala Lys Asp Lys Gly Val Asn Leu Val Leu
 275 280 285
 Ala Val Asp Ala Lys Ile Ala Asp Ala Phe Ser Asn Asp Ala Asn Thr
 290 295 300
 Lys Phe Cys Pro Val Asn Glu Ile Pro Asp Gly Trp Glu Gly Leu Asp
 305 310 315 320
 Ile Gly Pro Lys Ser Glu Glu Ile Phe Ala Glu Val Ile Lys Asn Ser
 325 330 335
 Lys Thr Ile Leu Trp Asn Gly Pro Thr Gly Val Phe Glu Phe Glu Asn
 340 345 350

Phe Thr His Gly Ser Arg Ser Val Gly Glu Ala Ile Val Glu Ala Thr
 355 360 365
 Lys Asn Gly Ala Phe Ser Leu Val Gly Gly Gly Asp Ser Val Ala Cys
 370 375 380
 Val Asn Lys Phe Gly Leu Ala Asn Gly Val Ser Tyr Val Ser Thr Gly
 385 390 395 400
 Gly Gly Ala Leu Leu Glu Ala Ile Glu Gly Lys Val Leu Pro Gly Ile
 405 410 415
 Ala Ala Ile Gln Glu
 420

<210> 9699
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9699
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9700
 <211> 229
 <212> PRT
 <213> B.fragilis

<400> 9700
 Glu Gln Thr Lys Met Thr Lys Lys Glu Arg Tyr Glu Lys Val Ile Ala
 1 5 10 15
 Trp Phe Gln Glu Asn Val Pro Val Ala Glu Thr Glu Leu His Tyr Asn
 20 25 30
 Asn Pro Tyr Glu Leu Leu Ile Ala Val Ile Leu Ser Ala Gln Cys Thr
 35 40 45
 Asp Lys Arg Val Asn Met Ile Thr Pro Arg Ile Tyr Gln Asp Phe Pro
 50 55 60
 Thr Pro Glu Ala Leu Ala Ala Thr Thr Pro Glu Val Ile Phe Glu Tyr
 65 70 75 80
 Ile Arg Ser Val Ser Tyr Pro Asn Asn Lys Ser Lys His Leu Val Gly
 85 90 95
 Met Ala Arg Met Leu Val Asn Asp Phe Asn Ser Glu Val Pro Asp Thr
 100 105 110
 Leu Glu Glu Leu Ile Lys Leu Pro Gly Val Gly Arg Lys Thr Ala Asn
 115 120 125
 Val Ile Gln Ser Val Val Phe Asn Lys Ala Ala Met Ala Val Asp Thr
 130 135 140
 His Val Phe Arg Val Ser His Arg Ile Gly Leu Val Ser Asn Ser Cys
 145 150 155 160
 Thr Thr Pro Phe Ser Val Glu Lys Glu Leu Met Lys Asn Ile Pro Asp
 165 170 175
 Glu Leu Ile Pro Ile Ala His His Trp Leu Ile Leu His Gly Arg Tyr

180 185 190
 Val Cys Gln Ala Arg Thr Pro Lys Cys Glu Thr Cys Gly Leu Gln Leu
 195 200 205
 Met Cys Lys Tyr Tyr Cys Glu Lys Tyr Lys Val Ser Lys Asp Thr Pro
 210 215 220
 Lys Arg Lys Asn Lys
 225

<210> 9701
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 9701
 Val Met Asn Lys Asp Asn Leu Leu Leu Tyr Thr Ala Val Ile Phe Leu
 1 5 10 15
 Phe Ile Lys Arg Asp Lys Ser Val Gly Leu Val Leu Leu Gly Leu Trp
 20 25 30
 Leu Val Leu Asn Ile Gly Leu Ile Val Ser Leu Leu Gly Ser Met Ser
 35 40 45
 Gly Tyr Leu Leu Pro Leu Ala Leu Leu Ile Ile Gly Gly Ile Leu Tyr
 50 55 60
 Leu Ile Ser Thr Arg
 65

<210> 9702
 <211> 723
 <212> PRT
 <213> B.fragilis

<400> 9702
 Leu Thr His Lys Ile Met Lys Leu Lys Ile Lys Leu Arg Asn Ile Leu
 1 5 10 15
 Ser Val Lys Ile His Lys Ile Val Leu Leu Leu Leu Ala Leu Cys Ile
 20 25 30
 Tyr Asn Thr Ala Tyr Gly Gln Asn Gln Arg Ile Ser Val Tyr Gly Asn
 35 40 45
 Asn Gln Ser Leu Gln Lys Val Phe Glu Gln Ile Glu Glu Gln Thr Gln
 50 55 60
 Leu Ser Ile Thr Tyr Asn Gln Thr Arg Leu Asp Val Asn Arg Lys Ile
 65 70 75 80
 Lys Gly Asn Phe Val Asp Lys Glu Leu Ser Phe Val Met Asp Ala Leu
 85 90 95
 Leu Lys Asn Thr Gly Phe Thr Cys Arg Tyr Glu Ala Glu His Ile Val
 100 105 110
 Ile Thr Pro Val Glu Gln Lys Lys Glu Lys Ala Ala Ala Gly Gln Ala
 115 120 125
 Thr Gln Met Lys Lys Ile Thr Gly Lys Val Thr Gly Val Thr Gly Glu
 130 135 140
 Pro Leu Ile Gly Ala Asn Val Leu Ala Val Gly Gly Lys Gln Ala Thr
 145 150 155 160
 Ile Thr Asn Leu Glu Gly Glu Phe Ser Leu Glu Val Ser Asp Asn Ser
 165 170 175
 Lys Leu Gln Val Thr Tyr Ile Gly Tyr Leu Pro Gln Glu Val Ser Thr
 180 185 190
 Asn Gly Lys Thr His Phe Val Ile Gln Leu Lys Glu Asp Ser Gln Leu
 195 200 205
 Met Asp Glu Val Val Val Val Gly Phe Gly Thr Gln Lys Lys Val Asn
 210 215 220

Leu Thr Gly Ala Val Thr Ala Val Asn Ile Gln Glu Thr Leu Gly Asp
 225 230 235 240
 Arg Pro Ile Thr Asn Val Thr Ala Ala Leu Gln Gly Val Val Pro Gly
 245 250 255
 Leu Lys Ile Glu Gly Thr Thr Gly Thr Pro Gly Asp Asn Leu Ser Tyr
 260 265 270
 Asn Ile Arg Gly Thr Thr Ser Ile Asn Gly Gly Gly Pro Leu Val Leu
 275 280 285
 Val Asn Asn Val Pro Met Asp Ile Asn Met Ile Asp Pro Gln Asp Ile
 290 295 300
 Glu Ser Val Ser Val Leu Lys Asp Ala Ala Ser Ala Ala Ile Tyr Gly
 305 310 315 320
 Ala Arg Ala Ala Phe Gly Val Ile Leu Ile Thr Thr Lys Gln Gly Lys
 325 330 335
 Lys Asp Met Ala Pro Lys Phe Asn Tyr Asn Asn Asn Phe Ser Phe Ser
 340 345 350
 Lys Ala Leu Glu Leu Pro Gln Lys Ala Gly Pro Leu Glu Ser Ile Leu
 355 360 365
 Ala Tyr Lys Glu Met Gly Trp Pro Asn Asp Thr Tyr Val Asp Gly Lys
 370 375 380
 Asn Ile Pro Gln Trp Glu Thr Tyr Ile Arg Asp Tyr Met Ala Asn Pro
 385 390 395 400
 Ser Gln Tyr Pro Asn Gly Tyr Val Phe Asp Glu Asp Gly Asn Leu Phe
 405 410 415
 Leu Met Arg Glu Asn Asp Met Phe Ala Asp Met Met Asp Asn Tyr Gly
 420 425 430
 Phe Met Gln Asn His Ser Phe Ser Val Ser Gly Gly Ser Ser Arg Thr
 435 440 445
 Asn Tyr Arg Ile Gly Leu Gly Tyr Thr Asn Glu Asp Gly Ile Leu Ile
 450 455 460
 Thr Asp Lys Asp Arg Tyr Glu Arg Ala Asn Leu Ser Ser Phe Leu Ser
 465 470 475 480
 Val Glu Val Asn Lys Trp Leu Thr Thr Gln Leu Asp Ile Arg Tyr Ala
 485 490 495
 Asn Ser Thr Gln Asn Lys Val Glu Gln Gly Gly Arg Asn Gly Ile Trp
 500 505 510
 Gly Ser Ala Met Gln Leu Pro Ser Tyr Gln Asn Ile Ser Pro Tyr Glu
 515 520 525
 Glu Asp Gly Ile Ile Tyr Pro Ala Glu Thr Ser Ala Thr Tyr Ile Arg
 530 535 540
 Tyr Gly Glu Pro Arg Ile Val Lys Lys Thr Asp Leu Arg Ala Leu Gly
 545 550 555 560
 Arg Ile Ile Ile Ser Pro Leu Lys Asn Leu Lys Ile Thr Gly Glu Tyr
 565 570 575
 Thr Tyr Asn Arg Val Thr Asn Tyr Asn Arg Met Tyr Val Asn Gln Tyr
 580 585 590
 Lys Tyr Ile Gly Met Asn Phe Thr Gly Val Leu Asn Asn Thr Glu Asn
 595 600 605
 Thr Arg Tyr Ala Leu Thr Gln Gly Phe Thr Asn Tyr Asn Ala Ile Asn
 610 615 620
 Ile Phe Ala Asn Tyr Asp Phe Ser Ile Gly Asn His His Ile Ser Val
 625 630 635 640
 Met Gly Gly Phe Asn Gln Glu Glu Asn His Ala Glu Ser Gln Trp Thr
 645 650 655
 Glu Arg Lys Asp Val Leu Leu Ser Asn Leu Pro Ser Ile Ser Gly Ala
 660 665 670
 Thr Gly Thr Thr Thr Ala Thr Asp Thr Phe Asn Glu Tyr Ala Leu Arg
 675 680 685
 Gly Leu Phe Tyr Arg Val Asn Tyr Ser Tyr Lys Asp Arg Tyr Met Leu

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690 695 700
 Glu Ala Asn Gly Arg Tyr Asp Gly Ser Leu His His Glu Ala Gly Arg
 705 710 715 720
 Asp Pro Gly

<210> 9703
 <211> 343
 <212> PRT
 <213> B.fragilis

<400> 9703
 Phe Thr Asn Asn Lys Leu Leu Asn Lys Met Val Asn Tyr Lys Asp Leu
 1 5 10 15
 Gly Leu Val Asn Thr Arg Asp Met Phe Ala Lys Ala Ile Lys Gly Gly
 20 25 30
 Tyr Ala Ile Pro Ala Phe Asn Phe Asn Asn Met Glu Gln Met Gln Ala
 35 40 45
 Ile Ile Lys Ala Ala Val Glu Thr Lys Ser Pro Val Ile Leu Gln Val
 50 55 60
 Ser Lys Gly Ala Arg Gln Tyr Ala Asn Ala Thr Leu Leu Arg Tyr Met
 65 70 75 80
 Ala Gln Gly Ala Val Glu Tyr Ala Lys Glu Leu Gly Cys Lys Asn Pro
 85 90 95
 Glu Ile Val Leu His Leu Asp His Gly Asp Thr Phe Glu Thr Cys Lys
 100 105 110
 Ser Cys Ile Asp Ser Gly Phe Ser Ser Val Met Ile Asp Gly Ser His
 115 120 125
 Leu Pro Tyr Asp Glu Asn Val Ala Leu Thr Lys Lys Val Val Glu Tyr
 130 135 140
 Ala His Gln Phe Asp Val Thr Val Glu Gly Glu Leu Gly Val Leu Ala
 145 150 155 160
 Gly Val Glu Asp Glu Val Ser Ser Asp His His Thr Tyr Thr Glu Pro
 165 170 175
 Asp Glu Val Val Asp Phe Val Thr Lys Thr Gly Cys Asp Ser Leu Ala
 180 185 190
 Ile Ser Ile Gly Thr Ser His Gly Ala Tyr Lys Phe Thr Pro Glu Gln
 195 200 205
 Cys His Ile Asp Pro Lys Thr Gly Arg Met Val Pro Pro Pro Leu Ala
 210 215 220
 Phe Asp Val Leu Asp Gly Val Met Lys Glu Leu Pro Gly Phe Pro Ile
 225 230 235 240
 Val Leu His Gly Ser Ser Ser Val Pro Glu Glu Glu Val Ala Thr Ile
 245 250 255
 Asn Gln Phe Gly Gly Ala Leu Lys Ala Ala Ile Gly Ile Pro Glu Glu
 260 265 270
 Glu Leu Arg Lys Ala Ala Lys Ser Ala Val Cys Lys Ile Asn Ile Asp
 275 280 285
 Ser Asp Ser Arg Leu Ala Met Thr Ala Ala Ile Arg Lys Val Phe Ala
 290 295 300
 Glu Lys Pro Ala Glu Phe Asp Pro Arg Lys Tyr Leu Gly Pro Ala Arg
 305 310 315 320
 Asp Asn Met Glu Lys Leu Tyr Lys His Lys Ile Ile Asn Val Leu Gly
 325 330 335
 Ser Asp Asn Lys Leu Ala Glu
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<210> 9704
 <211> 677

<212> PRT

<213> B.fragilis

<400> 9704

Val	Asp	Asn	Asn	Ile	Tyr	Asn	Ile	Glu	Lys	Asn	Met	Lys	Met	Asn	Tyr
1			5					10					15		
Leu	Ala	Phe	Ile	Gly	Val	Thr	Ala	Ala	Thr	Ala	Val	Val	Ser	Cys	Thr
			20					25					30		
Pro	Ala	Lys	Lys	Glu	Tyr	Ala	Ser	Tyr	Glu	Leu	Tyr	Pro	Val	Arg	Ser
		35					40					45			
Gly	Ser	Leu	Thr	Glu	Met	Glu	Tyr	Ser	Pro	Glu	Ser	Thr	Lys	Phe	Thr
	50					55					60				
Leu	Trp	Ala	Pro	Thr	Ala	Asp	Glu	Val	Arg	Leu	Met	Leu	Phe	Asp	Ser
65					70					75				80	
Gly	Glu	Gly	Gly	His	Ala	Tyr	Glu	Thr	Ile	Pro	Met	Glu	Pro	Gly	Glu
				85					90					95	
Glu	Gly	Thr	Trp	Met	Ala	Thr	Val	Ser	Lys	Asp	Leu	Met	Gly	Lys	Phe
			100					105					110		
Tyr	Thr	Phe	Asn	Val	Lys	Val	Asn	Asp	Lys	Trp	Met	Gly	Asp	Thr	Pro
		115					120					125			
Gly	Ile	Asn	Ala	Lys	Ala	Val	Gly	Val	Asn	Gly	Lys	Arg	Ala	Ala	Ile
	130					135					140				
Ile	Asn	Leu	Lys	Ser	Thr	Asp	Pro	Gln	Gly	Trp	Glu	Thr	Asp	Gln	Arg
145					150					155				160	
Pro	Pro	Leu	Lys	Ser	Pro	Ala	Asp	Ala	Ile	Ile	Tyr	Glu	Met	His	His
				165					170					175	
Arg	Asp	Phe	Ser	Val	Asp	Ser	Thr	Ser	Gly	Ile	Gln	His	Lys	Gly	Lys
			180					185					190		
Phe	Leu	Ala	Leu	Thr	Glu	His	Gly	Thr	Met	Asn	Ser	Ala	Lys	Leu	Leu
		195					200					205			
Thr	Gly	Ile	Asp	His	Leu	Ile	Glu	Leu	Gly	Val	Thr	His	Val	His	Leu
	210					215					220				
Leu	Pro	Ser	Tyr	Asp	Tyr	Ala	Ser	Val	Asp	Glu	Thr	Lys	Leu	Asp	Glu
225					230					235				240	
Asn	Lys	Tyr	Asn	Trp	Gly	Tyr	Asp	Pro	Gln	Asn	Tyr	Asn	Val	Pro	Asp
				245					250					255	
Gly	Ser	Tyr	Ala	Thr	Asp	Pro	Tyr	Asp	Pro	Ala	Val	Arg	Ile	Arg	Glu
			260					265					270		
Phe	Lys	Gln	Met	Val	Gln	Ala	Leu	His	Lys	Ala	Gly	Ile	Arg	Val	Val
		275					280					285			
Leu	Asp	Val	Val	Tyr	Asn	His	Thr	Tyr	Asn	Thr	Asp	Gly	Ser	Asn	Phe
	290					295					300				
Glu	Arg	Thr	Val	Pro	Gly	Tyr	Phe	Tyr	Arg	Gln	Lys	Pro	Asp	Gly	Ser
305					310					315				320	
Leu	Ala	Asn	Gly	Ser	Ala	Cys	Gly	Asn	Glu	Thr	Ala	Ser	Asn	Arg	Pro
				325					330					335	
Met	Met	Arg	Lys	Tyr	Met	Ile	Glu	Ser	Val	Leu	His	Trp	Ile	Lys	Glu
			340					345					350		
Tyr	His	Ile	Asp	Gly	Phe	Arg	Phe	Asp	Leu	Met	Gly	Ile	His	Asp	Ile
		355					360					365			
Glu	Thr	Met	Asn	Glu	Ile	Arg	Lys	Ala	Val	Ser	Ala	Val	Asp	Pro	Ser
	370					375					380				
Ile	Ile	Ile	Tyr	Gly	Glu	Gly	Trp	Ala	Ala	Glu	Ala	Pro	Gln	Tyr	Pro
385					390					395				400	
Gly	Asp	Ser	Leu	Ala	Met	Lys	Val	Asn	Thr	Cys	Lys	Met	Pro	Gly	Ile
				405					410					415	
Ala	Ala	Phe	Ser	Asp	Glu	Met	Arg	Asp	Ala	Leu	Arg	Gly	Pro	Phe	Asn
			420					425					430		
Asp	Asn	His	Lys	Gly	Ala	Phe	Leu	Ala	Gly	Ile	Pro	Gly	Glu	Glu	Glu

435 440 445
 Ser Ile Lys Phe Gly Ile Val Gly Ala Val Ser His Pro Gln Val Asn
 450 455 460
 Asn Asp Ser Val Asn Tyr Ser Lys Ala Pro Trp Ala Ser Gln Pro Thr
 465 470 475 480
 Gln Met Ile Ser Tyr Val Ser Cys His Asp Asp Met Cys Leu Val Asp
 485 490 495
 Arg Leu Lys Ser Ser Ile Pro Gly Ile Thr Pro Glu Gln Leu Val Arg
 500 505 510
 Leu Asp Lys Leu Ala Gln Thr Ala Val Leu Thr Ser Gln Gly Ile Pro
 515 520 525
 Phe Ile Tyr Ala Gly Glu Glu Val Met Arg Asp Lys Lys Gly Val His
 530 535 540
 Asn Ser Phe Glu Ser Pro Asp Ser Ile Asn Ala Ile Asp Trp Asn Arg
 545 550 555 560
 Lys Thr Thr His Glu Asp Val Phe Ala Tyr Tyr Lys Arg Leu Ile Ser
 565 570 575
 Ile Arg Lys Ala His Pro Ala Phe Arg Met Gly Asp Ala Glu Met Val
 580 585 590
 Arg Lys His Leu Glu Phe Leu Pro Val Asp Val Gly Asn Leu Val Ala
 595 600 605
 Phe Arg Leu Lys Asp Arg Ala Asn Gly Asp Thr Trp Asp Asn Ile Ile
 610 615 620
 Val Ala Leu Asn Ala Arg Ser Val Pro Ala Lys Leu Ala Ile Pro Glu
 625 630 635 640
 Gly Lys Tyr Thr Val Val Cys Arg Asp Gly Val Ile Asp Glu Arg Gly
 645 650 655
 Leu Gly Leu Leu Tyr Gly Pro Glu Val Thr Val Pro Ala Gln Ser Ala
 660 665 670
 Leu Ile Ile His Gln
 675

<210> 9705
 <211> 452
 <212> PRT
 <213> B.fragilis

<400> 9705
 Leu Ala Asp Asn Lys Thr Ile Arg Pro Met Arg Thr Arg Thr Met Lys
 1 5 10 15
 Pro Leu Phe Leu Ile Phe Cys Leu Cys Leu Ser Pro Leu Leu Met Gly
 20 25 30
 Gln Asn Gln Asn Lys Ile Gln Glu Ala Met Ala Asn Tyr Asp Tyr Glu
 35 40 45
 Thr Ala Val Glu Leu Ile Asn Lys Glu Pro Pro Thr Ile Pro Leu Leu
 50 55 60
 Met Gln Lys Ala Lys Ala Leu Lys Gly Ile Gly Ser Asn Ala Glu Ala
 65 70 75 80
 Leu Arg Ser Ile Arg Gln Val Ile Ala Glu Asp Ser Thr Asn Gln Gln
 85 90 95
 Ala His Ile Glu Ala Ala Glu Cys Cys Lys Ala Met Ala Lys Tyr Asn
 100 105 110
 Asp Ala Leu Asp Tyr Tyr Arg Lys Ala Ile Ser Leu Asn Pro Lys Asn
 115 120 125
 Lys Tyr Ala Arg Leu Gln Phe Ile Asn Leu Leu Cys Asn Thr Lys Asn
 130 135 140
 Tyr Ala Glu Ala Phe Gly Glu Ser Ser Met Met Ser Glu Thr Asp Ser
 145 150 155 160
 Ser Ala Val Val Leu His Leu Gln Ala Gln Ser Leu Glu Gly Met Gln

165 170 175
 Gln Ile Leu Pro Ala Ile Gly Cys Tyr Glu Val Ile Gln Asp Lys Tyr
 180 185 190
 Pro Asp Asp Tyr Leu Ala Ala Ala Lys Leu Gly Asn Leu Asn Ile Val
 195 200 205
 Ala Gly Tyr Pro Glu Tyr Ala Ile Gln Ala Thr Glu Arg Tyr Arg Glu
 210 215 220
 Arg Asp Ser Thr Asn Leu Ile Val Asn Gln Gln Asn Ala Leu Ala Tyr
 225 230 235 240
 Cys His Ala Glu Gln Tyr Pro Thr Ala Ile Lys Arg Tyr Glu Lys Leu
 245 250 255
 Cys Gln Gln Gly Asp Ser Ser Thr Gln Thr Leu Tyr Tyr Leu Gly Val
 260 265 270
 Ser Tyr Tyr Ala Asp Glu Tyr Tyr Tyr Glu Ala His Ala Cys Phe Ser
 275 280 285
 Lys Leu Gln Lys Glu Met Glu Glu Asn Pro Asn Leu Leu Tyr Tyr Leu
 290 295 300
 Gly Arg Cys Cys Ala Lys Thr Ser Trp Lys Lys Glu Gly Ile Glu His
 305 310 315 320
 Leu Glu Lys Ala Ile Glu Leu Thr Ile Pro Lys Asp Ser Thr Met Ile
 325 330 335
 Arg Leu Tyr Lys Gly Leu Val Asp Cys Cys Lys Leu Ala Gln Asp Thr
 340 345 350
 Pro Lys Gln Ile Gln Ala Leu Arg Glu Leu Tyr Lys Tyr Asp Lys Thr
 355 360 365
 Asn His Lys Leu Leu Tyr Asp Ile Ala Trp Asn Tyr Ser Tyr Gln Leu
 370 375 380
 Lys Asp Asn Lys Ser Ala Glu Arg Tyr Leu Gln Ala Phe Leu Lys Thr
 385 390 395 400
 Arg Lys Ala Asn Ala Arg Lys Glu Glu Pro Val Ser Glu Lys Gly Glu
 405 410 415
 Leu Val Leu Gly Leu Glu Asn Tyr Tyr Asn Ala Ala Glu Asn Trp Leu
 420 425 430
 Lys Asp Leu Gln Lys Glu Lys Phe Phe Lys Glu Gly Ile Pro Leu Glu
 435 440 445
 Ser Gln Lys Gln
 450

<210> 9706

<211> 131

<212> PRT

<213> B.fragilis

<400> 9706

Ile Met Lys Lys Ile Leu Leu Leu Leu Ser Val Cys Ile Ser Phe Ser
 1 5 10 15
 Ser Cys Cys Thr Leu Phe Ser Ser Ser Lys Gln Asp Ile Thr Phe Thr
 20 25 30
 Gly Met Asn Gly Thr Lys Ile Tyr Glu Ala Ser Thr Lys Gln Lys Ile
 35 40 45
 Ala Glu Ile Lys Glu Asp Asn Ser Val Thr Val Gln Ile Lys Lys Lys
 50 55 60
 Arg Glu Asp Lys Gln Leu Val Ala Lys Lys Glu Gly Tyr Gln Thr Thr
 65 70 75 80
 Pro Phe Val Leu Glu Ser Thr Phe Asn Asn Ala Cys Leu Trp Asn Ile
 85 90 95
 Leu Phe Trp Pro Gly Phe Leu Val Asp Leu Gly Thr Gln Lys Met Asn
 100 105 110
 Lys Trp Asp Asn Thr Ile Ile Asn Ile Glu Met Glu Lys Glu Asn Thr

115
Glu Asn Lys
130

120

125

<210> 9707
<211> 167
<212> PRT
<213> B.fragilis

<400> 9707
Leu Gln Lys Asn Phe Phe Ile Lys Gln Glu Leu Ile Phe Phe Val Leu
1 5 10 15
Phe Tyr Thr Ile Pro Lys Arg Arg Leu Ile Pro Lys Phe Lys Asn Ile
20 25 30
Val Met Lys Ile Ser His Ile Glu His Leu Gly Ile Ala Val Lys Ser
35 40 45
Ile Glu Glu Ala Leu Pro Tyr Tyr Glu Asn Val Leu Gly Leu Lys Cys
50 55 60
Tyr Asn Ile Glu Thr Val Glu Asp Gln Lys Val Arg Thr Ala Phe Leu
65 70 75 80
Lys Val Gly Asp Thr Lys Ile Glu Leu Leu Glu Pro Thr Cys Pro Glu
85 90 95
Ser Thr Ile Ala Lys Phe Ile Glu Asn Lys Gly Ala Gly Val His His
100 105 110
Val Ala Phe Ala Ile Glu Asp Gly Val Ala Asn Ala Leu Ala Glu Ala
115 120 125
Glu Ser Lys Glu Ile Arg Leu Ile Asp Lys Ala Pro Arg Lys Gly Ala
130 135 140
Glu Gly Leu Asn Ile Ala Phe Leu His Pro Lys Ser Thr Leu Gly Val
145 150 155 160
Leu Thr Glu Leu Cys Glu His
165

<210> 9708
<211> 425
<212> PRT
<213> B.fragilis

<400> 9708
Lys Val Arg Asn Asn Arg Ile Tyr Pro Leu Met Lys His Trp Ile Leu
1 5 10 15
Leu Leu Tyr Leu Gly Phe Ser Val Met Leu Arg Ala Gln Asn Thr Ala
20 25 30
Ser Val Gln Glu Ala Met Ala Asn Tyr Asp Tyr Lys Thr Val Ile Arg
35 40 45
Leu Ile Asp Glu Glu Ser Ala Ser Pro Gln Leu Leu Ile Gln Lys Ala
50 55 60
Lys Ala Leu Lys Gly Leu Gly Arg Thr Ala Glu Ala Leu Ser Thr Leu
65 70 75 80
Gln His Ile Ile Ile Glu Leu Pro Glu Asn Gln Gln Ala Leu Val Glu
85 90 95
Ala Ala Glu Cys Cys Arg Gln Leu Ser Lys Phe Asn Glu Ala Leu Gly
100 105 110
Tyr Tyr Arg Lys Val Met Glu Leu Asn Pro Glu His Ile Tyr Ala His
115 120 125
Leu Gln Tyr Thr Arg Leu Leu Tyr Asn Tyr Gln Arg Tyr Gly Asp Ala
130 135 140
Leu Arg Glu Ser Ile Ala Leu Ala Arg Lys Asp Ser Ser Ala Thr Val
145 150 155 160

Leu Arg Leu Met Ala Glu Ser Met Glu Gly Ala Gly Met Pro Val Glu
 165 170 175
 Ser Met Phe Cys Tyr Leu Ser Ile Ile Arg Lys Tyr Pro Ser Asp Tyr
 180 185 190
 Leu Ser Val Ala Lys Leu Gly Ser Ile Phe Asn Thr Met Lys Asp Tyr
 195 200 205
 Glu Gly Ala Ile Ala Leu Thr Glu Ala Tyr Arg Arg Thr Asp Ser Thr
 210 215 220
 Asn Val Glu Val Asn Arg Gln Asn Ala Leu Ala Tyr Cys Leu Arg Lys
 225 230 235 240
 Glu Tyr Pro Thr Ala Ile Lys Arg Tyr Gln Asp Leu Thr Ala Arg Gly
 245 250 255
 Asp Ser Thr Leu Leu Thr Cys Tyr Tyr Leu Gly Val Ser Tyr Tyr Ala
 260 265 270
 Thr Lys Glu Tyr Tyr Lys Ala Arg Asp Trp Leu Leu Lys Ala Lys Ser
 275 280 285
 Cys Gln Ser Pro Gly Ala Asn Leu Leu Tyr Tyr Leu Gly Arg Ser Cys
 290 295 300
 Ser Lys Thr Leu Trp Lys Gln Glu Gly Ile Gly Tyr Leu Asn Gln Ala
 305 310 315 320
 Ile Ala Leu Thr Ile Pro Ala Asp Ser Ile Met Glu Arg Leu Tyr Ser
 325 330 335
 Gly Leu Ala Asp Cys Tyr Arg Gln Thr Lys Gln Thr Arg Asp Gln Ile
 340 345 350
 Lys Ala Thr Lys Glu Gln Tyr Lys Tyr Ala Pro Asp Lys His Ile Leu
 355 360 365
 Leu Tyr Asn Leu Ala Phe Leu Ser Asp Lys Ile Glu Asp Thr Lys Ala
 370 375 380
 Thr Glu His Tyr Leu Gln Ala Phe Leu Arg Thr Lys Ser Lys Gln Asn
 385 390 395 400
 Ala Val Leu Gln Gln Pro Asp Asp Asp Glu Glu Glu Pro Ala Pro Tyr
 405 410 415
 Ile Asp Tyr Tyr Lys Ser Ala Thr Asn
 420 425

<210> 9709

<211> 443

<212> PRT

<213> B.fragilis

<400> 9709

Arg Ser Ser Lys Arg Pro Ile Lys Phe Tyr Cys Arg Arg His Glu His
 1 5 10 15
 Arg Val Ser Gln Gly Phe Leu Lys Ile Lys Lys Arg Leu Phe Val Arg
 20 25 30
 Leu Cys Val Thr Leu Arg Ser Asn Gln Asn His His Thr Met Ser Lys
 35 40 45
 Asp Arg Leu Val Thr Pro Ser Tyr Val Leu Ile Leu Ala Ala Asn Phe
 50 55 60
 Leu Leu Tyr Phe Ala Phe Tyr Leu Ile Leu Pro Val Leu Pro Phe Tyr
 65 70 75 80
 Leu Thr Glu Ile Phe Gln Thr Gly Asn Ala Ala Val Gly Val Ile Leu
 85 90 95
 Ser Cys Tyr Thr Val Ala Ser Leu Cys Ile Arg Pro Phe Ser Gly Tyr
 100 105 110
 Leu Leu Asp Thr Leu Ala Arg Lys Pro Leu Tyr Leu Ile Ala Tyr Phe
 115 120 125
 Leu Phe Ile Thr Val Phe Ala Gly Tyr Ile Leu Ala Gly Val Leu Ser
 130 135 140

Leu Phe Ile Met Leu Arg Val Val His Gly Leu Ala Phe Gly Met Val
 145 150 155 160
 Thr Val Ala Gly Asn Thr Ile Val Ile Asp Ile Thr Pro Ser Ser Arg
 165 170 175
 Arg Gly Glu Ala Val Gly Tyr Tyr Gly Leu Met Asn Asn Thr Ala Met
 180 185 190
 Ser Phe Gly Pro Met Ile Gly Leu Phe Met His Asp Thr Cys Ser Phe
 195 200 205
 Glu Thr Ile Phe Leu Cys Ser Leu Leu Ser Gly Thr Val Gly Phe Ala
 210 215 220
 Ala Ala Cys Leu Val Lys Thr Pro Val Lys Glu Pro Val Lys Arg Glu
 225 230 235 240
 Pro Ile Ser Leu Asp Arg Phe Val Leu Ile Lys Gly Ile Pro Ala Gly
 245 250 255
 Val Ala Leu Leu Leu Leu Ser Ile Pro Tyr Gly Met Thr Ser Thr Tyr
 260 265 270
 Ile Ala Met Tyr Ala Lys Glu Ile Gly Ile Thr Leu Ser Ser Gly Leu
 275 280 285
 Phe Phe Thr Phe Met Ala Val Gly Met Ala Val Ser Arg Met Phe Ser
 290 295 300
 Gly Arg Gln Val Asp Lys Gly Arg Ile Thr Gln Val Ile Thr Leu Gly
 305 310 315 320
 Leu Tyr Leu Val Cys Ala Cys Phe Phe Thr Leu Ala Ala Cys Gly Lys
 325 330 335
 Leu Met Ser Leu Ser Pro Glu Leu Thr Asp Val Leu Phe Phe Met Val
 340 345 350
 Ala Leu Leu Leu Gly Val Gly Phe Gly Thr Met Phe Pro Ala Phe Asn
 355 360 365
 Thr Leu Phe Val Asn Leu Ala Pro Asn Ser Gln Arg Gly Thr Ala Thr
 370 375 380
 Ser Thr Tyr Leu Thr Ser Trp Asp Val Gly Ile Gly Ile Gly Leu Ile
 385 390 395 400
 Leu Gly Gly Tyr Ile Ala Gln Leu Thr Ser Phe Asp Met Ala Tyr Phe
 405 410 415
 Phe Gly Ala Cys Leu Thr Val Val Ser Thr Phe Tyr Phe Asn Leu Lys
 420 425 430
 Val Ala Pro His Tyr His Lys Asn Lys Leu Arg
 435 440

<210> 9710

<211> 349

<212> PRT

<213> B.fragilis

<400> 9710

Arg Lys Ser Asn Asn Asn Lys Ser Gln Asp Met Ile Ala Lys Ile Asn
 1 5 10 15
 Gln Leu Leu Glu Glu Val Gly Ala Leu Lys Ala Ala Asn Ala Glu Glu
 20 25 30
 Leu Glu Val Leu Arg Ile Lys Tyr Leu Ser Lys Lys Gly Ala Ile Asn
 35 40 45
 Asp Leu Met Ala Asp Phe Arg Asn Val Ala Ala Glu Gln Lys Lys Glu
 50 55 60
 Val Gly Met Lys Leu Asn Glu Leu Lys Thr Lys Ala Gln Glu Lys Ile
 65 70 75 80
 Asn Ala Leu Lys Glu Gln Phe Asp Asn Gln Asp Asn Gly Gln Asp Asp
 85 90 95
 Leu Asp Leu Thr Arg Ser Ala Tyr Pro Val Glu Leu Gly Thr Arg His
 100 105 110

Pro Leu Ser Ile Val Arg Asn Glu Ile Ile Asp Ile Phe Ala Arg Leu
 115 120 125
 Gly Phe Asn Ile Ala Glu Gly Pro Glu Ile Glu Asp Asp Trp His Val
 130 135 140
 Phe Ser Ala Leu Asn Phe Ala Glu Asp His Pro Ala Arg Asp Met Gln
 145 150 155 160
 Asp Thr Phe Phe Ile Glu Ser His Pro Asp Val Leu Leu Arg Thr His
 165 170 175
 Thr Ser Ser Val Gln Ser Arg Val Met Glu Val Ser Gln Pro Pro Ile
 180 185 190
 Arg Ile Ile Cys Pro Gly Arg Val Tyr Arg Asn Glu Ala Ile Ser Tyr
 195 200 205
 Arg Ala His Cys Phe Phe His Gln Val Glu Ala Leu Tyr Val Asp Arg
 210 215 220
 Asn Val Ser Phe Thr Asp Leu Lys Gln Val Leu Leu Leu Phe Ala Lys
 225 230 235 240
 Glu Met Phe Gly Ala Asp Thr Lys Ile Arg Leu Arg Pro Ser Tyr Phe
 245 250 255
 Pro Phe Thr Glu Pro Ser Ala Glu Met Asp Ile Ser Cys Asn Ile Cys
 260 265 270
 Gly Gly Lys Gly Cys Pro Phe Cys Lys His Thr Gly Trp Val Glu Ile
 275 280 285
 Leu Gly Cys Gly Met Val Asp Pro Asn Val Leu Asp Ala Asn Gly Ile
 290 295 300
 Asp Ser Lys Val Tyr Ser Gly Tyr Ala Leu Gly Met Gly Ile Glu Arg
 305 310 315 320
 Ile Thr Asn Leu Lys Tyr Gln Val Lys Asp Leu Arg Met Phe Ser Glu
 325 330 335
 Asn Asp Thr Arg Phe Leu Lys Glu Phe Glu Ala Ala Tyr
 340 345

<210> 9711
 <211> 97
 <212> PRT
 <213> B.fragilis

<400> 9711
 Phe Leu Cys Asp Gln Ser Ser Gly Asn Asn Asn Asn Lys Thr Ile Val
 1 5 10 15
 Val Leu Pro Glu Lys Ile Val Ser Trp Ala Val Thr Asn Pro Pro Gly
 20 25 30
 Leu Trp Gly Phe Leu Glu Ile Leu Leu His Gly Ala Cys Ser Gly Ser
 35 40 45
 Lys Val Leu Ile Val Met Leu Asn Glu Arg Pro Arg Trp Pro Pro Leu
 50 55 60
 Thr Pro Pro Ser Asp Thr Asn Phe Ser Lys Gln Met Leu Thr Met Glu
 65 70 75 80
 Gly Thr Leu Val Ser Gln Gly Phe Glu Phe Ser Leu His Ala His Leu
 85 90 95
 Phe

<210> 9712
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9712
 His Tyr Arg Leu Arg Phe Leu Ser Cys Phe Val Tyr Ser Val Val Tyr

1	5	10	15
Arg Tyr Thr Leu Trp Gln Ile Leu Glu Lys Thr Lys Trp Gly Ser Pro			
	20	25	30
His Gly Phe Pro His Phe Asn Asp Glu Ile Phe Thr Ile Phe Ile Asn			
	35	40	45
Trp Val Trp Arg Val Ser Asp Ser Asn Arg Ser Pro			
	50	55	60

<210> 9713

<211> 733

<212> PRT

<213> B.fragilis

<400> 9713

Ile Met Asn Glu Gln Leu Ile Asn Glu Gln Tyr Gln Tyr Ile Leu Arg			
1	5	10	15
Leu Ile Gly Gln Lys Arg Leu Lys Glu Ala Leu Thr Gln Leu Glu Ser			
	20	25	30
Phe Leu Trp Lys Cys Pro Glu Trp Ser Leu Arg Thr Arg Leu Glu Gln			
	35	40	45
Ile Gln Thr Ser Tyr Ser Tyr Met Leu Gln Tyr Met Arg Gln Gly Ile			
	50	55	60
Glu Asp Pro Glu Arg Arg Lys Leu Tyr Gln Lys Leu Leu Thr Asp Thr			
65	70	75	80
Leu Glu Ile Thr Asp Gln Ala Arg Ile Thr Leu Leu Asp Ser Val Ser			
	85	90	95
Asn His Tyr Tyr His Gln Tyr Arg Thr Arg Leu Ser Glu Glu Val Ser			
	100	105	110
Pro Leu Thr Leu Glu Met Leu Met His Thr Leu Glu Ser Phe Asn Asp			
	115	120	125
Asp Leu Ala Val Ser Gly Phe Val Ser Asp Gln Asn Met Glu Glu Val			
	130	135	140
Leu Lys Arg His Glu Asp Ser Leu Lys Thr Leu Phe Leu Gln Thr Trp			
145	150	155	160
Thr His Thr Asn Trp Thr Ala Glu Glu Val Ala Ala Ala Gln Ala Met			
	165	170	175
Leu Gln Ser Glu Leu Leu Pro Val Asn Asp Leu Cys Leu Phe Thr Ser			
	180	185	190
Ala Val Thr Leu Ser Val Met Glu Cys Phe Asp Leu Lys Lys Leu Leu			
	195	200	205
Trp Leu Ile Asp Ala Tyr Arg His Pro Asn Val Gln Val Ser Gln Arg			
	210	215	220
Ala Leu Val Gly Ile Thr Phe Ile Leu His Ala Tyr Ser Pro Arg Ile			
225	230	235	240
Ser Phe Tyr Pro Glu Ile Asn Leu Arg Ile Thr Ala Leu Met Glu Glu			
	245	250	255
Thr Ala Phe Glu Arg Asp Leu Leu Arg Ile His Ile Gln Ile Leu Leu			
	260	265	270
Ser Gln Glu Thr Glu Lys Ile Asp Lys Lys Met Arg Glu Glu Ile Ile			
	275	280	285
Pro Glu Met Leu Lys Ser Met Ser Pro Met Arg Asn Met Lys Phe Gly			
	290	295	300
Phe Glu Glu Ser Asp Glu Glu Lys Asp Asp Thr Asn Pro Asp Trp Ala			
305	310	315	320
Asp Ala Ile Glu Lys Ser Gly Leu Gly Asp Lys Leu Arg Glu Met Asn			
	325	330	335
Glu Leu Gln Leu Glu Gly Ala Asp Val Tyr Met Ser Thr Phe Ser Gln			
	340	345	350
Leu Lys Ser Tyr Pro Phe Phe Arg Asp Ile Ser Asn Trp Phe Tyr Pro			

355 360 365
 Phe Asp Lys Gln Gln Ser Asp Val Ile Lys Glu Phe Arg His Arg Gly
 370 375 380
 Lys Glu Gly Gly Ser Leu Leu Glu Ile Ile Leu Gln Ser Gly Phe Phe
 385 390 395 400
 Cys Asn Ser Asp Lys Tyr Ser Leu Phe Phe Thr Met Gln Gln Leu Pro
 405 410 415
 Gln Ser Gln Arg Asp Met Met Leu Asn Gln Leu Thr Asp Gln Gln Ile
 420 425 430
 Glu Glu Leu Ala Asp Gln Ser Lys Ala Glu Thr Leu Lys Lys Phe Ser
 435 440 445
 Glu Arg Pro Asp Thr Val Ser Asn Gln Tyr Leu His Asp Leu Tyr Arg
 450 455 460
 Phe Phe Lys Leu Tyr Ala Arg Arg Leu Glu Phe Arg Asp Leu Phe Lys
 465 470 475 480
 Glu Ser Ile Cys Leu Tyr Asn Glu Pro Asp Leu Ile Asp Ile Leu Phe
 485 490 495
 Asn Pro Glu Ala Met Glu Ala Ile Ala Asn Phe His Phe Lys Lys Lys
 500 505 510
 His Trp Glu Glu Ala Ala Glu Ala Tyr Asp Thr Ile Val Asp Met Leu
 515 520 525
 Met Asp Glu Glu Glu Ala Glu Ile Cys Gln Lys Gln Gly Tyr Ser Leu
 530 535 540
 Gln Lys Leu Lys Arg Tyr Asp Glu Ala Ile Lys Ala Tyr Arg Lys Ala
 545 550 555 560
 Asp Ile Leu Lys Ser Asn Asn Val Trp Thr Asn His His Leu Gly Thr
 565 570 575
 Cys Tyr Arg Leu Asn Arg Gln Phe Lys Glu Ala Leu Lys Tyr Tyr Arg
 580 585 590
 Lys Val Glu Glu Val Leu Pro Glu Asp Thr Lys Val Ile Phe Tyr Ile
 595 600 605
 Gly Ser Cys Leu Ala Glu Met Trp Asn Phe Glu Glu Ala Leu Asn Tyr
 610 615 620
 Phe Phe Lys Leu Asp Phe Leu Glu Ser Asn Cys Val Lys Ala Trp Arg
 625 630 635 640
 Ala Ile Gly Trp Cys Ser Phe Met Ile Ala Lys Arg Glu Gln Ala Met
 645 650 655
 Lys Tyr Tyr Asp Lys Val Ile Asp Gln Ser Pro Met Pro Val Asp Tyr
 660 665 670
 Leu Asn Ala Gly His Val Ala Trp Ser Leu Gly Asn Val Glu Lys Thr
 675 680 685
 Leu Ser Leu Tyr Thr Lys Ala Ala Glu Leu Tyr Gly Ser Lys Glu Leu
 690 695 700
 Phe Leu Glu Val Phe Arg Lys Asp Glu Glu Ile Ile Thr Ser Lys Gly
 705 710 715 720
 Val Thr Pro Asp Asp Ile Pro Leu Val Leu Asp Leu Ile
 725 730

<210> 9714

<211> 508

<212> PRT

<213> B.fragilis

<400> 9714

Lys Leu Met Asp Met Thr Thr Ser Ser Gln Lys Asp Ile Ile Asn Asp
 1 5 10 15
 Ile Leu Ser Ala Met Gln Cys Tyr Pro Glu Asn Glu Ala Phe Ile Ile
 20 25 30
 Asp Asp Lys His Tyr Thr Tyr Ala Gln Leu Gly Glu Ile Thr Ala Ser

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099

<210> 9715
 <211> 173
 <212> PRT
 <213> B.fragilis

<400> 9715

Thr Ile Lys Asp Met Lys Thr Ile Thr Phe Phe Lys Arg Val Leu Ala
 1 5 10 15
 Ser Ala Ala Leu Val Ser Val Cys Gly Phe Ala Cys Ala Thr Asn Asn
 20 25 30
 Gly Lys Gln Phe Ile His Asn Asp Thr Met Glu Gly Gly Lys Leu Val
 35 40 45
 Cys Arg Glu Ile Tyr Ala Met Asn Asp Ala Ala Ser Gly Ile Leu Asn
 50 55 60
 Pro Val Lys Met Tyr Lys Tyr Ser Tyr Asp Thr Asp Gln Gln Lys Thr
 65 70 75 80
 Val Lys Ser Thr Tyr Ala Trp Asn Ile Phe Lys Asn Thr Trp Glu Thr
 85 90 95
 Glu Ser Arg Thr Val Ile Ser Arg Tyr Glu Thr Glu Thr Ser Val Glu
 100 105 110
 Tyr Ser Val Trp Asn Lys Glu Lys Gly Ser Phe Asp Leu Ser Lys Lys
 115 120 125
 Tyr Ile Tyr Ile Thr Asp Asn Asn Asn Gln Leu Ile Ala Gln Tyr Ala
 130 135 140
 Tyr Lys Met Asn Ser Arg Thr Asn Gln Trp Ile Leu Glu Lys Asp Ala
 145 150 155 160
 Leu Thr Pro Ile Tyr Glu Asn Ile Tyr Ala Thr Thr Arg
 165 170

<210> 9716
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9716

Thr Gly Gly Cys Gln Glu His Gly Glu Tyr His Glu Ala Ile Ser Asp
 1 5 10 15
 Asp Gly Phe Met Gln Lys Glu Trp Phe Gln Ala Asp Lys Gly Phe Ala
 20 25 30
 Leu Cys Thr Leu Pro Met Asp Glu Ser Tyr Gln Glu Arg Asp Asp
 35 40 45
 Glu Tyr Ile Tyr Ser Asp Leu Arg Gly Cys Glu Pro Ile Glu Cys Phe
 50 55 60
 Pro Val Gly Lys Cys Ile Glu Arg
 65 70

<210> 9717
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9717

Pro Phe Leu Leu Phe Leu Leu Leu Tyr Glu Asp Arg Arg Gly Asp Ser
 1 5 10 15
 Gly Gly Phe Leu Leu Phe Ala Val Asn Glu Leu Lys Ile Leu Val Ala
 20 25 30
 Asn Leu Ile Leu Ile Val Asn Lys Leu Lys Trp Ile Val Phe Gly Glu
 35 40 45

Gln Phe Pro Leu Arg Ser Gly Phe Arg Ala Lys Lys
 50 55 60

<210> 9718
 <211> 285
 <212> PRT
 <213> B.fragilis

<400> 9718

Leu Trp Leu Arg Lys Thr Asp Asn Pro Leu Arg Asp Cys Leu Leu Pro
 1 5 10 15
 Ser Ala Lys Ala Ser Ala Tyr Phe Leu Pro Leu Leu Ser Asn Ala Ala
 20 25 30
 Lys Ser Ile Ala Pro Ala Glu Tyr Leu Ile Thr Glu Ala Asp Lys Glu
 35 40 45
 Arg Ile Phe Gly Glu Met Leu Glu His Leu Thr Thr Glu Ala Leu Arg
 50 55 60
 Asn Ser Phe Leu Ile Glu Phe Arg Asn Leu Glu Asn Ala Met Phe Gly
 65 70 75 80
 Tyr Lys Tyr Phe Arg Ser Asn Arg Tyr Phe Pro Val Asn Trp Leu Arg
 85 90 95
 Val Arg Asn Ser Leu His Gly Ile Glu Asn Ala Glu Gln Arg Phe Ser
 100 105 110
 Pro Ser Arg Ile Arg Gln Ile Lys Lys Gly Leu Lys Asn Gly Ala Lys
 115 120 125
 Val Asp Glu Ala Arg Thr Val Glu Glu Ile Arg Glu Phe Ser Asn Met
 130 135 140
 Leu Arg His Leu Tyr Ser Ser Arg Ile Arg Lys His Phe Pro Asn Ile
 145 150 155 160
 Ile Phe Phe Gln His Met Asp Thr Arg Leu Ile His Ser Arg Gln Ala
 165 170 175
 Lys Ile Phe Ile Val Arg Tyr Lys Asp Lys Ile Ile Gly Gly Ser Ala
 180 185 190
 Cys Ile Tyr Ser Gly Asn Asp Ala Tyr Leu Trp Phe Ser Gly Gly Met
 195 200 205
 Arg Lys Thr Tyr Ala Leu Gln Tyr Pro Gly Ile Leu Ala Val Trp Lys
 210 215 220
 Ala Leu Gln Asp Ala His Gln Asn Gly Phe Arg His Met Glu Phe Met
 225 230 235 240
 Asp Ala Gly Leu Pro Phe Lys Lys His Gly Tyr Arg Asp Phe Val Leu
 245 250 255
 Arg Phe Gly Gly Lys Gln Ser Ser Thr Arg Arg Trp Phe Arg Phe Arg
 260 265 270
 Trp Gln Trp Leu Asn Asp Leu Leu Ile Lys Ile Tyr Val
 275 280 285

<210> 9719
 <211> 246
 <212> PRT
 <213> B.fragilis

<400> 9719

Thr Gln Asp Arg Thr Trp Asn Val Gly Asp Asn Ile Ser Tyr Asn Lys
 1 5 10 15
 Asn Lys Ile Thr Lys Met Thr Phe Asn Asp Asp Pro Asn Tyr Ala Gly
 20 25 30
 Val Ile His Gly Gly Ile Asp Gly Gly Thr Gly Tyr Asn Ala Leu Ile
 35 40 45
 His Arg Val Gly Glu Ala Phe Asn Ser Phe Tyr Val Phe Glu Gln Ile

50		55		60
Tyr Gly Pro Asp Gly	Lys Pro Ile Glu Gly	Ala Tyr Val Asp Gln Asn		
65	70	75	80	
Gly Asp Asn Gln Ile	Asn Asp Ala Asp Leu	Ile Cys Phe Lys Lys Ala		
	85	90	95	
Ala Pro Asp Val Phe	Met Gly Leu Thr Ser	Gln Leu Ser Tyr Lys Asn		
	100	105	110	
Trp Asp Phe Ser Phe	Ala Leu Arg Gly Ser	Phe Gly Asn Tyr Val Tyr		
	115	120	125	
Asn Asn Val Gln Ser	Asn Arg Glu Ala Tyr	Glu Gly Ala Asn Met Tyr		
	130	135	140	
Asp Gln Thr Gly Phe	Leu Lys Asn Arg Leu	Thr Ser Ala Arg Ser Thr		
	145	150	155	160
Asp Phe Lys Asn Ala	Gln Tyr Arg Ser Ser	Tyr Tyr Val Gln Asn Ala		
	165	170	175	
Ser Phe Val Arg Met	Asp Asn Ile Ser Leu	Gly Tyr Thr Phe Asn Lys		
	180	185	190	
Leu Phe Asn Asp Lys	Gln Ser Ala Arg Val	Tyr Ala Thr Val Gln Asn		
	195	200	205	
Pro Phe Val Ile Thr	Lys Tyr Lys Gly Leu	Asp Pro Glu Ile Ser Gly		
	210	215	220	
Glu Gly Ile Asp Asn	Asn Ile Tyr Pro Arg	Pro Arg Val Phe Met Ile		
	225	230	235	240
Gly Leu Asn Leu Asn	Phe			
	245			

<210> 9720

<211> 97

<212> PRT

<213> B.fragilis

<400> 9720

Lys Asp Cys Arg Thr	Asp Lys Arg Glu Glu	Thr Leu Lys Thr Ile Ile
1	5	10
Asn Met Asn Arg Glu	Glu Val Leu Lys Gln	Leu Gln Ser Ile Phe Arg
	20	25
Asn Ile Leu Lys Lys	Asp Asn Val Cys Ile	Asp Glu Ser Ser Thr Ser
	35	40
Lys Asp Val Asp Gly	Trp Asp Ser Leu Thr	His Met Gln Ile Ile Ala
	50	55
Gln Ile Glu Lys His	Phe Gly Val Arg Phe	Asn Phe Arg Glu Val Ile
	65	70
Lys Phe Lys Asn Val	Gly Asp Leu Cys Ser	Ala Leu Leu Thr Lys Met
	85	90
Glu		95

<210> 9721

<211> 540

<212> PRT

<213> B.fragilis

<400> 9721

Lys Arg Lys Arg Ser	Ala Leu Arg Leu Met	Val Lys Leu Asn Leu Pro
1	5	10
Thr Arg Pro Trp Val	Pro Gln Trp Leu Gly	Ile Val Thr Met Phe Ile
	20	25
Val Ile Phe Pro Ile	Thr Leu Leu Asn Gly	Ala Tyr Thr Gly Ser Met
	35	40
		45

Val	Glu	Val	Ser	Asn	Thr	Leu	Gly	Val	Leu	Ser	Glu	Asp	Ile	Thr	Met
50						55					60				
Ala	Tyr	Tyr	Ser	Ala	Ser	Val	Gly	Met	Ala	Val	Ala	Tyr	Pro	Ile	Val
65						70					75				80
Pro	Lys	Ile	Arg	Thr	Ile	Ala	Thr	Pro	Lys	Thr	Leu	Leu	Leu	Thr	Asp
						85					90				95
Leu	Leu	Leu	Gln	Ile	Phe	Phe	Ser	Leu	Val	Cys	Ala	Lys	Thr	Gly	Ser
						100									110
Met	Asp	Val	Ile	Met	Val	Cys	Ser	Phe	Cys	Met	Gly	Phe	Leu	Lys	Ala
						115									125
Phe	Val	Met	Leu	Glu	Phe	Ile	Ile	Leu	Ile	Arg	Pro	Leu	Phe	Ser	Pro
						130									140
Lys	Asn	Val	Arg	Ser	Glu	Phe	Tyr	Ala	Tyr	Phe	Tyr	Pro	Ile	Val	Phe
145						150									160
Ser	Gly	Gly	Gln	Leu	Ser	Met	Ala	Ile	Thr	Ala	Gln	Leu	Ala	Tyr	His
						165									175
Tyr	Gln	Trp	Gln	His	Met	Tyr	Tyr	Phe	Val	Thr	Ile	Leu	Leu	Leu	Ile
						180									190
Ala	Ile	Leu	Phe	Val	Ile	Cys	Phe	Phe	Arg	Tyr	Ala	Arg	Arg	Pro	Met
						195									205
His	Ile	Pro	Phe	Lys	Glu	Met	Asp	Gly	Arg	Ser	Met	Phe	Ile	Ile	Ala
210						215									220
Thr	Ala	Phe	Leu	Leu	Thr	Leu	Tyr	Thr	Phe	Thr	Tyr	Gly	Lys	Thr	Leu
225						230									240
Asp	Trp	Phe	Ala	Ser	Pro	Lys	Ile	Arg	Val	Tyr	Val	Phe	Val	Ile	Pro
						245									255
Leu	Leu	Ile	Ala	Leu	Phe	Ile	His	Arg	Gln	Arg	Thr	Gln	Gly	Lys	Pro
						260									270
Phe	Val	Ser	Leu	Lys	Pro	Leu	Phe	Leu	His	Lys	Ser	Ile	Ile	Gly	Tyr
						275									285
Gly	Phe	Met	Val	Leu	Ala	Met	Phe	Leu	Thr	Ala	Thr	Ser	Ser	Leu	Val
						290									300
Thr	Asn	Tyr	Met	Asn	Ser	Ile	Ile	Arg	Val	Asp	Ser	Ile	His	Ala	Asn
305						310									320
Ser	Leu	Ser	Leu	Trp	Leu	Leu	Pro	Gly	Tyr	Val	Val	Gly	Ala	Val	Ile
						325									335
Cys	Phe	Trp	Trp	Phe	Arg	Trp	Gln	Arg	Trp	Arg	Phe	Arg	Phe	Leu	Ile
						340									350
Ser	Gly	Gly	Met	Phe	Cys	Tyr	Val	Ile	Tyr	Leu	Ala	Ile	Leu	Tyr	Phe
						355									365
Gly	Ile	Thr	Pro	Tyr	Gly	Thr	Tyr	Glu	Met	Leu	Tyr	Leu	Pro	Ile	Leu
						370									380
Phe	Arg	Gly	Val	Gly	Met	Met	Val	Ile	Phe	Ile	Ala	Phe	Gly	Val	Phe
385						390									400
Val	Val	Glu	Asp	Leu	Asp	Pro	Arg	Leu	Thr	Leu	Ser	Asn	Ala	Phe	Phe
						405									415
Leu	Ile	Ser	Phe	Arg	Ser	Val	Leu	Ala	Pro	Val	Leu	Ser	Ala	Ser	Phe
						420									430
Phe	Asn	Asn	Met	Leu	Tyr	Tyr	Leu	Gln	Ala	Lys	Gly	Met	Asn	Ile	Leu
						435									445
Ser	Glu	Asn	Met	Thr	Leu	Thr	Asn	Pro	Leu	Ala	Glu	Gln	Lys	Tyr	Asn
						450									460
Gln	Ala	Leu	Ser	Asn	Ala	Leu	Ala	Gln	Gly	His	Glu	Phe	Ser	Glu	Ala
465						470									480
Gly	Gln	Leu	Ala	Ala	Asn	Ser	Leu	Tyr	Ser	Thr	Leu	Gln	Gln	Gln	Ser
						485									495
Leu	Leu	Leu	Ala	Leu	Lys	Thr	Leu	Ile	Gly	Tyr	Val	Leu	Ile	Leu	Ala
						500									510
Leu	Val	Ile	Ala	Val	Ile	Ala	Ala	Phe	Ile	Pro	Phe	His	Lys	Thr	Leu

<400> 9722

1. $\frac{1}{2}$ 2. $\frac{1}{2}$ 3. $\frac{1}{2}$ 4. $\frac{1}{2}$ 5. $\frac{1}{2}$ 6. $\frac{1}{2}$ 7. $\frac{1}{2}$ 8. $\frac{1}{2}$ 9. $\frac{1}{2}$ 10. $\frac{1}{2}$ 11. $\frac{1}{2}$ 12. $\frac{1}{2}$ 13. $\frac{1}{2}$ 14. $\frac{1}{2}$ 15. $\frac{1}{2}$ 16. $\frac{1}{2}$ 17. $\frac{1}{2}$ 18. $\frac{1}{2}$ 19. $\frac{1}{2}$ 20. $\frac{1}{2}$ 21. $\frac{1}{2}$ 22. $\frac{1}{2}$ 23. $\frac{1}{2}$ 24. $\frac{1}{2}$ 25. $\frac{1}{2}$ 26. $\frac{1}{2}$ 27. $\frac{1}{2}$ 28. $\frac{1}{2}$ 29. $\frac{1}{2}$ 30. $\frac{1}{2}$ 31. $\frac{1}{2}$ 32. $\frac{1}{2}$ 33. $\frac{1}{2}$ 34. $\frac{1}{2}$ 35. $\frac{1}{2}$ 36. $\frac{1}{2}$ 37. $\frac{1}{2}$ 38. $\frac{1}{2}$ 39. $\frac{1}{2}$ 40. $\frac{1}{2}$ 41. $\frac{1}{2}$ 42. $\frac{1}{2}$ 43. $\frac{1}{2}$ 44. $\frac{1}{2}$ 45. $\frac{1}{2}$ 46. $\frac{1}{2}$ 47. $\frac{1}{2}$ 48. $\frac{1}{2}$ 49. $\frac{1}{2}$ 50. $\frac{1}{2}$ 51. $\frac{1}{2}$ 52. $\frac{1}{2}$ 53. $\frac{1}{2}$ 54. $\frac{1}{2}$ 55. $\frac{1}{2}$ 56. $\frac{1}{2}$ 57. $\frac{1}{2}$ 58. $\frac{1}{2}$ 59. $\frac{1}{2}$ 60. $\frac{1}{2}$ 61. $\frac{1}{2}$ 62. $\frac{1}{2}$ 63. $\frac{1}{2}$ 64. $\frac{1}{2}$ 65. $\frac{1}{2}$ 66. $\frac{1}{2}$ 67. $\frac{1}{2}$ 68. $\frac{1}{2}$ 69. $\frac{1}{2}$ 70. $\frac{1}{2}$ 71. $\frac{1}{2}$ 72. $\frac{1}{2}$ 73. $\frac{1}{2}$ 74. $\frac{1}{2}$ 75. $\frac{1}{2}$ 76. $\frac{1}{2}$ 77. $\frac{1}{2}$ 78. $\frac{1}{2}$ 79. $\frac{1}{2}$ 80. $\frac{1}{2}$ 81. $\frac{1}{2}$ 82. $\frac{1}{2}$ 83. $\frac{1}{2}$ 84. $\frac{1}{2}$ 85. $\frac{1}{2}$ 86. $\frac{1}{2}$ 87. $\frac{1}{2}$ 88. $\frac{1}{2}$ 89. $\frac{1}{2}$ 90. $\frac{1}{2}$ 91. $\frac{1}{2}$ 92. $\frac{1}{2}$ 93. $\frac{1}{2}$ 94. $\frac{1}{2}$ 95. $\frac{1}{2}$ 96. $\frac{1}{2}$ 97. $\frac{1}{2}$ 98. $\frac{1}{2}$ 99. $\frac{1}{2}$ 100. $\frac{1}{2}$

<400> 9723

Ile Lys Met Ser Thr Ile Asn Tyr Asp Leu Thr Arg Ile Lys Ala Leu
1 5 10 15

Val Phe Asp Val Asp Gly Val Leu Ser Ala Asn Val Ile Pro Leu His
 20 25 30
 Pro Ser Gly Glu Pro Met Arg Thr Val Asn Val Lys Asp Gly Tyr Ala
 35 40 45
 Ile Gln Leu Ala Val Lys Lys Gly Leu Arg Ile Ala Ile Ile Thr Gly
 50 55 60
 Gly Arg Ser Asp Val Val Arg Lys Arg Phe Ile Gly Leu Gly Val Ser
 65 70 75 80
 Asp Leu Tyr Phe Gly Ser Ala Val Lys Ile His Asp Tyr Arg Gly Phe
 85 90 95
 Arg Asp Lys His Gly Leu Thr Asp Glu Glu Ile Leu Tyr Met Gly Asp
 100 105 110
 Asp Val Pro Asp Met Glu Val Met Arg Glu Cys Gly Leu Pro Cys Cys
 115 120 125
 Pro Lys Asp Ala Val Pro Glu Val Lys Ala Ile Ala Arg Tyr Ile Ser
 130 135 140
 Tyr Ala Asp Gly Gly Tyr Gly Cys Gly Arg Asp Val Val Glu Gln Val
 145 150 155 160
 Leu Lys Ala Gln Gly Gln Trp Leu Ser Asp Asp Ala Phe Gly Trp
 165 170 175

<210> 9724
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 9724
 Gln Glu Ser Gly Gly Asp Asp Glu His Ala Ser Ser Val His Leu Phe
 1 5 10 15
 Glu Arg Asn Val His Gly Thr Pro Cys Ile Ala Glu Glu Thr Asp Asp
 20 25 30
 Glu Gln Asn Gly Asp Gln Gln Glu Asp Gly Asp Lys Ile Val His Val
 35 40 45
 Leu Pro Leu Val Val Ile Gly Gln Leu Ser Gly Asp Ser His Arg
 50 55 60

<210> 9725
 <211> 624
 <212> PRT
 <213> B.fragilis

<400> 9725
 Phe Ser Met Gly Lys Pro Gln Arg Arg Ala Arg Pro Asp Gly Asp Cys
 1 5 10 15
 Ile Pro Leu Arg Asn Lys Ile His Pro Leu Phe Tyr Ile Asp Ser Thr
 20 25 30
 Gln Trp Ala Asn Arg Lys Ile Leu Glu Arg Ile Cys His Ala Pro Leu
 35 40 45
 Arg His Gly Glu Arg Asp His Gly Asn Tyr Ser Pro Lys Ser Leu Thr
 50 55 60
 Tyr Arg Ser Ile Lys Val Lys Asn Ser Phe Pro Glu Ala Ile Tyr Thr
 65 70 75 80
 Phe Ile Gly Lys Thr Leu Trp His Asn Arg Arg Lys Asn Ser Ala Val
 85 90 95
 Gly Asn Phe Phe Arg Ile Phe Val Thr Ser Asn His Lys Phe Thr Lys
 100 105 110
 Lys Asp Thr Thr Met Lys Arg Leu Thr Ile Leu Phe Met Leu Phe Leu
 115 120 125
 Thr Ser Cys Ile Leu Tyr Ala Lys Asp Arg Lys Gly Asn Asp Leu Ser

130		135		140
Gly Pro Ile Ala Leu	Lys Gly Glu Leu Thr	Glu Lys Tyr Gln Asn Tyr		
145	150	155	160	
Thr Lys Gly Thr Pro	Val Val Ile Arg Gly Val	Arg Lys Met Arg Ile		
	165	170	175	
Ser Pro Asp Glu Thr	Ala Gly Ile Thr Tyr Ala	Val Glu Ile Asp Gly		
	180	185	190	
Leu Gln Tyr Pro Val	Gly Ala Glu Glu Ala Gly	Lys Ile Ile Arg Leu		
	195	200	205	
Lys Pro Ala Thr Val	Leu Glu Tyr Trp Gln Gly	Val Tyr Leu Ser Gln		
	210	215	220	
Gly Met Tyr Asp Tyr	Tyr Asn Arg Lys Gly Tyr	Arg Tyr Lys Met Arg		
225	230	235	240	
Gln Glu Leu Asp Glu	Glu Cys Leu Asp Tyr Leu	Asp Lys Leu Asn Glu		
	245	250	255	
Ile Ala Tyr Lys Asp	Ala Tyr Ile Gln Asp Tyr	Val Gln Ala Ile Phe		
	260	265	270	
Ala Lys Val Asn Pro	Gly Glu Ile Asp Thr Asn	Arg Pro Glu Arg Leu		
	275	280	285	
Asn Val Arg Ile Ile	Gln Ser Pro Glu Pro Asp	Ala Tyr Met Leu Pro		
	290	295	300	
Asn Gly Ala Met Leu	Val Ser Thr Gly Leu Leu	Cys Thr Ile Asp Ser		
305	310	315	320	
Glu Glu Glu Leu Glu	Ala Ile Ile Ala Asn Glu	Met Val His Phe Ile		
	325	330	335	
Leu Asp His Gln Val	Asp Asn Val Ser Arg Ala	Glu Thr Arg Ala Lys		
	340	345	350	
Arg Ala Ala Phe Trp	Ala Asp Val Leu Gly Thr	Val Ala Met Ala Ala		
	355	360	365	
Asp Asp Thr Asn Trp	Met Tyr Gly Tyr Asp Glu	Arg Val Gly Ala Ile		
	370	375	380	
Glu Leu Ala Ala Ser	Ile Gly Thr Ile Ala Ala	Leu Ile Asn Val Arg		
385	390	395	400	
Thr Val Asn Arg Leu	Gly Met Asp Tyr Ser Ser	Lys Gln Glu Leu Gln		
	405	410	415	
Ala Asp Arg Ile Ala	Arg Asp Tyr Leu Ala Phe	Lys Gly Met Asn Pro		
	420	425	430	
Asn Ala Leu Ser Ser	Ala Ile Asn Lys Ile Lys	Glu Phe Tyr Gly Ser		
	435	440	445	
Val His Arg Tyr Asp	Asn Leu Thr Arg Tyr Gly	Ser Tyr Gly Leu Leu		
	450	455	460	
Lys Glu Arg Leu Ala	Lys Leu Gly Glu Thr Glu	Gly Ile His Ser His		
465	470	475	480	
Met Phe Glu Lys Met	Thr Ser Asp Ile Val Thr	Phe Asn Ala Ala Met		
	485	490	495	
Tyr Gln Gly Asp Lys	Arg Tyr Lys Met Ala Glu	Gln Leu Ala Gln Lys		
	500	505	510	
Asn Ile Asp Asn Arg	Val Ala Ser Asp His Asp	Tyr Val Ile Leu Val		
	515	520	525	
Lys Ala Arg Met Ala	Gln Glu Asn Thr Pro Glu	Ser Asn Glu Ala Cys		
	530	535	540	
Met Lys Leu Leu Glu	Lys Ala Arg Glu Ile Ala	Thr Ala Arg Asn Leu		
545	550	555	560	
Asp Ile Asn Lys Gln	Glu Ile Leu Leu Leu Met	Arg Met Asn Lys Gln		
	565	570	575	
Ala Lys Ala Ala Asp	Lys Leu Lys Glu Tyr Leu	Asp Leu Leu Ala Glu		
	580	585	590	
Tyr Lys Gln Gln Asn	Asp Met Asn Thr Gln Glu	Ser Glu Trp Ile Gly		
	595	600	605	

130 135 140
 145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605

Glu Glu Leu Asp Trp Ala Ser Lys Met Leu Ser Lys Ile Ser Leu Leu
 610 615 620

<210> 9726
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9726
 Cys Thr Phe Phe Ile Asn Gln Ser Asp His Arg Phe Ile Val Ile Val
 1 5 10 15
 Cys His Cys Phe Leu Asn Gly Gly Gly Val Leu Gly Ser Gln His Tyr
 20 25 30
 Ala Glu Ala Gln Ile Glu Glu Glu Tyr Pro Met Phe His Glu Gly Ile
 35 40 45
 Asp Ser Ile Val Ser Asp Phe Leu Thr Val Phe Leu Leu
 50 55 60

<210> 9727
 <211> 620
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (367), (382)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 9727
 Arg Ala Asn Ile Met Lys Lys Leu Leu Leu Leu Leu Gly Ser Phe Leu
 1 5 10 15
 Leu Ser Leu Thr Thr Tyr Ala Ala Met Asn Ile Ser Lys Ile Asp Pro
 20 25 30
 Pro Phe Trp Phe Thr Gly Met Asn Asn Pro Glu Leu Gln Leu Met Val
 35 40 45
 Tyr Gly Glu Gly Ile Gly Gln Ala Ser Val Ser Val Asn Tyr Pro Gly
 50 55 60
 Val Ser Leu Ser Ser Val Val Lys Leu Glu Ser Asn Asn Tyr Leu Leu
 65 70 75 80
 Val Tyr Leu His Leu Asp Lys Glu Val Lys Pro Gly Lys Met Pro Ile
 85 90 95
 Thr Phe Thr Val Gly Lys Lys Lys Leu Val Lys Glu Tyr Glu Leu Lys
 100 105 110
 Ala Arg Ser Lys Ala Gly Val Asp His Lys Gly Phe Asp Ala Ser Asp
 115 120 125
 Ala Leu Tyr Leu Leu Met Pro Asp Arg Phe Ala Asn Gly Asn Pro Asp
 130 135 140
 Asn Asp Arg Ile Glu Gly Met Ala Glu Tyr Lys Val Asp Arg Asn Asp
 145 150 155 160
 Pro Asn Ala Arg His Gly Gly Asp Leu Ala Gly Ile Glu Gln Asn Leu
 165 170 175
 Asp Tyr Phe Thr Asp Leu Gly Val Thr Ala Leu Trp Phe Thr Pro Val
 180 185 190
 Leu Glu Asn Asn Met Lys Gly Gly Ser Tyr His Gly Tyr Ala Thr Thr
 195 200 205
 Asp Tyr Tyr Lys Val Asp Pro Arg Phe Gly Thr Asn Glu Glu Tyr Arg
 210 215 220
 Ser Leu Ile Ala Lys Ala His Asn Arg Gly Ile Lys Val Val Met Asp
 225 230 235 240

Met Ile Phe Asn His Cys Gly Val Glu His Pro Trp Ile Lys Asp Met
 245 250 255
 Pro Ser Lys Asp Trp Phe Asn His Ala Asp Phe Lys Asn Asn Phe Val
 260 265 270
 Gln Thr Ser Tyr Lys Leu Thr Pro His Val Asp Pro Tyr Ala Ser Glu
 275 280 285
 Tyr Asp Phe Asp Gln Met Asn Asn Gly Trp Phe Val Glu Ala Met Pro
 290 295 300
 Asp Leu Asn Gln Lys Asn Pro His Val Tyr Lys Tyr Leu Leu Gln Asn
 305 310 315 320
 Ser Leu Trp Trp Ile Glu Tyr Ala Asp Ile Asp Gly Ile Arg Met Asp
 325 330 335
 Thr Tyr Pro Tyr Ala Asp Tyr Asp Ala Met Ser Asn Trp Met Lys Glu
 340 345 350
 Leu Asn Glu Asp Thr Pro Thr Thr Thr Arg Trp Ala Lys Pro Xaa Leu
 355 360 365
 Pro Lys Pro Pro Ile Gln Pro Gly Gly Arg Lys Glu Leu Xaa Asn Phe
 370 375 380
 Arg Pro Gly Asn Lys Tyr Leu Lys Thr Ser Met Asn Phe Asn Phe Ser
 385 390 395 400
 Asp Lys Val Asn Thr Ala Lys Asn Glu Gln Thr Asp Thr Trp Phe Lys
 405 410 415
 Gly Trp Asn Arg Val Tyr Asn Asn Phe Val Tyr Asp Tyr Leu Tyr Pro
 420 425 430
 Asn Pro Ala Ser Val Leu Ala Phe Ile Glu Asn His Asp Thr Asp Arg
 435 440 445
 Phe Leu Gly Glu Gly Glu Asn Leu Asp Met Leu Lys Gln Ala Ser Thr
 450 455 460
 Leu Leu Leu Thr Thr Arg Arg Ile Pro Gln Leu Tyr Tyr Gly Thr Glu
 465 470 475 480
 Val Met Met Asn Gly Val Lys Ser Lys Ser Asp Gly Tyr Val Arg Lys
 485 490 495
 Asp Phe Pro Gly Gly Trp Thr Asp Asp Lys Glu Asn Ala Leu Thr Pro
 500 505 510
 Glu Gly Arg Thr Arg Leu Gln Asn Glu Ser Tyr Asn Phe Tyr Arg Asn
 515 520 525
 Leu Leu Asn Trp Arg Lys Gly Asn Asp Val Ile Ala Lys Gly Ser Met
 530 535 540
 Lys Gln Phe Met Val Gln His Gly Val Tyr Ala Tyr Ala Arg Gln Tyr
 545 550 555 560
 Lys Gly Lys Thr Val Phe Val Leu Leu Asn Gly Thr Asp Lys Glu Val
 565 570 575
 Lys Leu Pro Leu Lys Tyr Tyr Ala Glu Val Leu Lys Asp Lys Thr Gln
 580 585 590
 Gly Lys Asp Val Ile Ser Gly Lys Val Thr Ala Leu Asn Glu Glu Leu
 595 600 605
 Thr Met Ala Pro Arg Gln Ser Met Val Ile Glu Leu
 610 615 620

<210> 9728

<211> 88

<212> PRT

<213> B.fragilis

<400> 9728

Lys Thr Asn Ile Lys Met Lys Lys Gly Leu His Pro Glu Ser Tyr Arg
 1 5 10 15
 Pro Val Val Phe Lys Asp Met Ser Asn Gly Asp Met Phe Leu Ser Lys
 20 25 30

Ser Thr Val Ala Thr Lys Glu Thr Ile Glu Phe Glu Gly Glu Thr Tyr
 35 40 45
 Pro Leu Leu Lys Ile Glu Ile Ser Asn Thr Ser His Pro Phe Tyr Thr
 50 55 60
 Gly Lys Ser Thr Leu Val Asp Thr Ala Gly Arg Val Asp Lys Phe Met
 65 70 75 80
 Ser Arg Tyr Gly Asn Arg Lys Lys
 85

<210> 9729

<211> 190

<212> PRT

<213> B.fragilis

<400> 9729

Ile Ile Cys Ile Met Lys Phe Ile Arg Lys Phe Pro Val Thr Asp Ala
 1 5 10 15
 Asp Ser Leu Glu Ser Pro Gln Lys Phe Glu Gly Phe Phe Leu Asp Tyr
 20 25 30
 Tyr Pro Arg Val Lys Gly Phe Ile Asn Gly Leu Leu Gln Asp Ala Glu
 35 40 45
 Glu Ala Glu Asp Leu Ser Gln Asp Ile Phe Met Ser Leu Trp Gln Asn
 50 55 60
 Arg Gly Asn Leu Lys Gln Ile Asp Asn Leu Asp Ala Tyr Leu Phe Arg
 65 70 75 80
 Ile Ala Arg Asn Ala Val Phe Arg Tyr Ile Glu Arg Ser Leu Leu Phe
 85 90 95
 Lys Asn Tyr Gln Ser Arg Gln Leu Ser Asp Asp Asn Ser Asp Leu Tyr
 100 105 110
 Glu Ile Glu Ser Glu Leu Asn Ala Lys Glu Leu Glu Leu Ile Ile Ala
 115 120 125
 Ile Ala Val Glu Arg Met Pro Ser Gln Arg Arg Lys Ile Tyr Gln Met
 130 135 140
 Ser Arg Glu Gln Gly Leu Ser Asn Glu Asn Ile Ala Arg Glu Leu Asn
 145 150 155 160
 Ile Ser Lys Arg Thr Val Glu Asn His Leu Thr Gln Ala Leu Ala Asp
 165 170 175
 Ile Arg Lys Ile Leu Phe Trp Val Ile Met Ala Thr Phe Val
 180 185 190

<210> 9730

<211> 283

<212> PRT

<213> B.fragilis

<400> 9730

Asn Leu Ser Ile Met Lys Arg Phe Leu Val Leu Ser Cys Ser Val Ala
 1 5 10 15
 Ile Ser Ala Leu Phe Phe His Ala Cys Ser Ser Ser Asp Asp Ser Met
 20 25 30
 Ile Asp Ala Pro Leu Thr Arg Ala Asp Ala Val Ser Glu Lys Ile Val
 35 40 45
 Phe Gln Asp Asp Phe Asn Gln Ala Asp Ser Ile Pro Asp Arg Asn Lys
 50 55 60
 Trp Ser Leu Cys Lys Lys Gly Ser Pro Ala Trp Ser Lys Tyr Leu Ser
 65 70 75 80
 Glu Ser Tyr Asp Gln Ala Tyr Val His Asp Gly Lys Leu Val Leu Val
 85 90 95
 Ala Glu Lys Val Asn Gly Val Tyr Lys Thr Gly Gly Val Gln Ser Leu

[illegible]

<400> 9731

Glu	Lys	Leu	Met	Ser	Asn	Gln	Leu	Glu	Lys	Val	Lys	Glu	Leu	Ile	Glu
1				5					10					15	
Leu	Arg	Ala	Gln	Ala	Arg	Leu	Gly	Gly	Gly	Glu	Lys	Ala	Ile	Glu	Lys
		20					25						30		
Gln	His	Ala	Lys	Gly	Lys	Tyr	Thr	Ala	Arg	Glu	Arg	Ile	Ala	Gln	Leu
		35				40						45			
Leu	Asp	Glu	Gly	Ser	Phe	Glu	Glu	Leu	Asp	Met	Phe	Val	Gln	His	Arg
	50				55					60					
Cys	Thr	Asn	Phe	Gly	Gln	Glu	Lys	Lys	His	Phe	Leu	Gly	Asp	Gly	Val
65				70					75					80	
Val	Thr	Gly	Tyr	Gly	Thr	Ile	Glu	Gly	Arg	Leu	Val	Tyr	Val	Phe	Ala
				85				90					95		
Gln	Asp	Phe	Thr	Val	Phe	Gly	Gly	Ser	Leu	Ser	Glu	Thr	Met	Ala	Gln
			100				105						110		
Lys	Ile	Cys	Lys	Val	Met	Asp	Met	Ala	Met	Lys	Met	Gly	Ala	Pro	Val
		115				120						125			
Ile	Gly	Ile	Asn	Asp	Ser	Gly	Gly	Ala	Arg	Ile	Gln	Glu	Gly	Ile	Asn
	130					135					140				
Ala	Leu	Ser	Gly	Tyr	Ala	Glu	Ile	Phe	Gln	Arg	Asn	Ile	Met	Ala	Ser
145				150					155					160	
Gly	Val	Ile	Pro	Gln	Ile	Ser	Gly	Ile	Phe	Gly	Pro	Cys	Ala	Gly	Gly
				165				170					175		
Ala	Val	Tyr	Ser	Pro	Ala	Leu	Thr	Asp	Phe	Thr	Leu	Met	Thr	Glu	Gly
			180					185					190		
Thr	Ser	Tyr	Met	Phe	Leu	Thr	Gly	Pro	Ala	Val	Val	Lys	Thr	Val	Thr
		195				200						205			
Gly	Glu	Asp	Val	Ser	Gln	Glu	Asp	Leu	Gly	Gly	Ala	Ser	Val	His	Ala
	210				215						220				
Ser	Lys	Ser	Gly	Val	Thr	His	Phe	Thr	Ala	Glu	Thr	Gly	Glu	Glu	Gly

225 230 235 240
 Leu Ala Ile Ile Arg Lys Leu Leu Ser Phe Ile Pro Gln Asn Asn Leu
 245 250 255
 Glu Glu Ala Pro Leu Val Asn Cys Thr Asp Pro Ile Asp Arg Met Asp
 260 265 270
 Asp Leu Leu Asn Glu Ile Ile Pro Asp Ser Pro Asn Lys Pro Tyr Asp
 275 280 285
 Met Tyr Glu Val Ile Gly Ala Ile Ile Asp Asn Gly Glu Phe Leu Glu
 290 295 300
 Val Gln Lys Asp Tyr Ala Lys Asn Leu Ile Ile Gly Phe Ala Arg Met
 305 310 315 320
 Asn Gly Gln Ser Val Gly Val Val Ala Asn Gln Pro Lys Tyr Leu Ala
 325 330 335
 Gly Val Leu Asp Ser Asn Ala Ser Arg Lys Gly Ala Arg Phe Val Arg
 340 345 350
 Phe Cys Asp Ala Phe Asn Ile Pro Leu Val Thr Leu Val Asp Val Pro
 355 360 365
 Gly Phe Leu Pro Gly Thr Gly Gln Glu Tyr Asn Gly Val Ile Leu His
 370 375 380
 Gly Ala Lys Leu Leu Tyr Ala Tyr Gly Glu Ala Thr Val Pro Lys Val
 385 390 395 400
 Thr Val Thr Leu Arg Lys Ser Tyr Gly Gly Ser His Ile Val Met Ser
 405 410 415
 Cys Lys Gln Leu Arg Gly Asp Met Asn Tyr Ala Trp Pro Thr Ala Glu
 420 425 430
 Ile Ala Val Met Gly Gly Ala Gly Ala Val Ala Val Leu Tyr Ala Lys
 435 440 445
 Glu Ala Lys Asp Gln Glu Asn Pro Ala Gln Phe Leu Ala Asp Lys Glu
 450 455 460
 Ala Glu Tyr Thr Lys Leu Phe Ala Asn Pro Tyr Asn Ala Ala Lys Tyr
 465 470 475 480
 Gly Tyr Ile Asp Asp Val Ile Glu Pro Arg Asn Thr Arg Phe Arg Val
 485 490 495
 Ile Arg Ala Leu Gln Gln Leu Gln Thr Lys Lys Leu Thr Asn Pro Ala
 500 505 510
 Lys Lys His Gly Asn Ile Pro Leu
 515 520

<210> 9732

<211> 146

<212> PRT

<213> B.fragilis

<400> 9732

Asn Glu Ala Met Lys Gln Tyr Lys Tyr Lys Ile Asn Gly Asn Leu Tyr
 1 5 10 15
 Asn Val Thr Val Asn Asp Val Glu Asp Asn Ile Ala Asn Val Glu Val
 20 25 30
 Asn Gly Thr Ser Tyr Lys Val Glu Leu Asp Lys Pro Val Lys Ala Ala
 35 40 45
 Pro Lys Pro Val Thr Arg Pro Ala Ala Ala Pro Lys Thr Glu Thr Gly
 50 55 60
 Ala Pro Val Val Thr Lys Gln Pro Thr Ala Ser Lys Lys Asp Gly Val
 65 70 75 80
 Lys Ser Pro Leu Pro Gly Val Ile Leu Asp Ile Lys Val Lys Glu Gly
 85 90 95
 Asp Thr Val Lys Arg Gly Gln Thr Ile Ile Ile Leu Glu Ala Met Lys
 100 105 110
 Met Glu Asn Asn Ile Asn Ala Asn Lys Asp Gly Lys Val Ala Glu Ile

115 120 125
 Lys Val Asn Lys Gly Asp Ser Val Leu Glu Gly Thr Asp Leu Val Ile
 130 135 140
 Ile Glu
 145

<210> 9733
 <211> 352
 <212> PRT
 <213> B.fragilis

<400> 9733

Pro Lys Pro Phe Thr Arg Met Leu His His Ser Ser Arg Ile Ser Pro
 1 5 10 15
 Lys Thr Arg Phe Cys Leu Lys Leu Leu Leu Leu Ile Leu Pro Leu Ile
 20 25 30
 Pro Ile Val Val Val Tyr Phe Met Phe Asp Pro Tyr Arg Val Leu His
 35 40 45
 Pro Tyr Lys Arg Phe Asp Asp Ser Pro Met Leu Leu Asn Glu Ala His
 50 55 60
 Val Gly Trp Gln Asn Tyr Leu Gln Asn Arg Asp Ser Ile Ala Tyr Asn
 65 70 75 80
 Ser Phe Ile Leu Gly Asn Ser Cys Thr Met Ala Phe Leu Thr Gly Glu
 85 90 95
 Trp Glu Lys Tyr Leu Asp Lys Asn Asp His Ala Val Arg Phe Tyr Asp
 100 105 110
 Asn Gly Glu Ser Leu Gly Gly Val Arg Gln Lys Leu Gln Leu Leu Asp
 115 120 125
 Ser Val Gly Ala Pro Leu Lys Asn Ile Leu Ile Val Leu Asp Lys Lys
 130 135 140
 Ser Leu Asp Lys Asn Ala Pro Leu Ser Gly Asn Asn His Leu Phe Ser
 145 150 155 160
 Ala Glu Ala Ala Gly Ile Ser Gln Leu Gly Phe Gln Leu Arg Phe Leu
 165 170 175
 Gln Glu Phe Leu Tyr Pro Asp Arg Met Ile Pro Tyr Ile Asp Tyr Leu
 180 185 190
 Ile Arg His Lys Tyr Ala Pro Tyr Met Lys Gly Val Ile Asn Pro Gly
 195 200 205
 Asp Pro Val Arg Glu Pro Tyr Thr Asn Asn Phe Ile Asn Pro Arg Glu
 210 215 220
 Lys Glu Ile Ala Gln Asp Gly Glu Ile Tyr Trp Ser Arg His Glu Lys
 225 230 235 240
 Glu Phe Lys Lys Arg Thr Asn Ala Gly Met Glu Glu Leu Pro Val Ile
 245 250 255
 Phe Ala Ser Gln Ile Gln Val Leu Arg Ser Ile Lys Lys Ile Cys Asp
 260 265 270
 Lys His His Thr Asn Leu Lys Phe Val Ile Gly Pro Asp Tyr Tyr Gln
 275 280 285
 Lys Lys Ala Ser Arg Glu Asp Ile Lys Ile Leu Lys Ala Ile Leu Gly
 290 295 300
 Asp Ser Ala Val Trp Asp Phe Thr Gly Ile Asn Glu Tyr Thr Ala Asp
 305 310 315 320
 Ile His His Tyr Tyr Glu Pro Gly His Tyr Arg Pro Leu Leu Gly Ala
 325 330 335
 Arg Leu Leu Lys Ala Ile Tyr Gln Asp Gln Asp Thr Cys His Arg Gln
 340 345 350

<210> 9734
 <211> 538

<212> PRT

<213> B.fragilis

<400> 9734

Lys Gln Arg Ile Lys Ile Met Lys Lys Ile Tyr Phe Tyr Thr Leu Leu
 1 5 10 15
 Leu Gly Leu Leu Ala Phe Thr Ala Cys Glu Asp Glu Lys Ser Pro Val
 20 25 30
 Met Glu Leu Gln Lys Ala Ser Ala Phe Glu Pro Phe Ser Gln Ser Asp
 35 40 45
 Phe Thr Phe Asn Asp Glu Asn Ala Ala Glu Phe Pro Glu Ile Lys
 50 55 60
 Trp Thr Ala Ala Asp Tyr Gly Val Lys Ala Val Val Asn Tyr Asp Val
 65 70 75 80
 Thr Leu Thr Asn Asp Ala Asn Ala Lys Thr Val Leu Leu Gly Glu Thr
 85 90 95
 Gly Thr Thr Ser Leu Lys Phe Thr Asn Gly Gln Met Asn Thr Met Met
 100 105 110
 Ala Lys Val Gly Ala Tyr Pro Gly Gln Thr Tyr Asn Phe Thr Ile Thr
 115 120 125
 Leu Thr Ser Lys Ala Tyr Asp Met Thr Ala Asp Pro Ala Ser Asn Ser
 130 135 140
 Ile Thr Phe Lys Ala Thr Leu Phe Asp Pro Asn Ala Val Asp Trp Lys
 145 150 155 160
 Phe Ala Tyr Val Ala Val Gly Tyr Pro Asp Trp Asp Tyr Thr Asn Ala
 165 170 175
 Tyr Leu Leu Gly Asp Pro Asp Gly Asp Gly Val Tyr Gln Gly Tyr Ala
 180 185 190
 Asn Phe Asp Ala Asp Gly Val Ser Tyr Ala Ile Ile Asp Gly Ser Asp
 195 200 205
 Leu Thr Lys Ile Leu Ala Lys Asp Gln Thr Ala Ala Lys Lys Gly Phe
 210 215 220
 Tyr Gly Ile Lys Val Asp Ala Glu Gly Lys Val Glu Gln Thr Glu Pro
 225 230 235 240
 Leu Val Trp Gly Val Val Gly Asp Ala Thr Ser Gly Gly Trp Asp Lys
 245 250 255
 Asp Thr Gln Met Asp Tyr Asp Ala Thr Thr Arg Leu Trp Thr Val Thr
 260 265 270
 Thr Ser Leu Leu Asp Lys Glu Phe Lys Phe Arg Ser Asn Asn Asn Trp
 275 280 285
 Asp Ser Asp Asn Tyr Gly Ala Val Ser Gly Lys Glu Ser Glu Leu Glu
 290 295 300
 Gly Glu Leu Val Ala Gly Pro Asn Asn Phe Lys Val Leu Lys Ala Ser
 305 310 315 320
 Pro Tyr Val Ile Thr Met Asn Leu Thr Asn Ala Gly Lys Tyr Ser Tyr
 325 330 335
 Ser Met Val Glu Thr Thr Ile Glu Leu Ser Ser Ala Glu Met Ala Leu
 340 345 350
 Pro Gly Ser Tyr Gln Gly Trp Asp Ala Thr Lys Asp Asp Cys Tyr Lys
 355 360 365
 Val Gln Ser Ala Ala Arg Asp Phe Ile Tyr Thr Gly Thr Phe Tyr Phe
 370 375 380
 Asp Ala Asp Thr Lys Phe Lys Phe Trp Asp Ala Gly Val Trp Ile Gly
 385 390 395 400
 Met Met Gly Pro Ile Ser Trp Asp Glu Ala Lys Asn Ile Gly Thr Phe
 405 410 415
 Val Leu Met Pro Ser Asp Gly Asp Asn Ile Lys Ile Glu Thr Ala Gly
 420 425 430
 Tyr Tyr Arg Val Gly Ala Asp Met Lys Lys Leu Thr Ala Ser Leu Thr

435 440 445
 Lys Thr Gly Trp Glu Ile Ile Gly Asp Ala Thr Pro Gly Gly Trp Asp
 450 455 460
 Lys Gly Thr Val Met Asn Tyr Asp Pro Ala Thr Lys Leu Trp Ser Val
 465 470 475 480
 Asp Val Thr Leu Val Ala Gly Glu Ile Lys Phe Arg Trp Asp Gly Ala
 485 490 495
 Trp Thr Val Asn Leu Gly Gly Ser Leu Gly Ala Leu Thr Gln Asp Gly
 500 505 510
 Ala Asn Met Lys Val Thr Ala Gly Ala Tyr Thr Ile Val Leu Asn Pro
 515 520 525
 Asp Ala Lys Thr Ala Thr Met Thr Lys Lys
 530 535

<210> 9735
 <211> 210
 <212> PRT
 <213> B.fragilis

<400> 9735

Cys Phe Arg Met Val Ile Ser Ser Ile Tyr Leu Ile Tyr Leu Phe Ile
 1 5 10 15
 Ser Met Leu Ala Asn Leu Asp Arg Tyr Lys Ile Val Leu Ala Ser Asn
 20 25 30
 Ser Pro Arg Arg Lys Glu Leu Met Thr Gly Leu Gly Val Asp Tyr Val
 35 40 45
 Val Lys Thr Leu Pro Asp Val Asp Glu Ser Tyr Pro Asp Thr Leu Gln
 50 55 60
 Gly Glu Glu Ile Pro Leu Phe Ile Ala Arg Glu Lys Ala Ala Ala Tyr
 65 70 75 80
 Gln Ser Met Ile Gly Pro Glu Glu Leu Leu Ile Thr Ala Asp Thr Ile
 85 90 95
 Val Trp His Glu Gly Lys Ala Leu Gly Lys Pro Val Gly Arg Gln Asp
 100 105 110
 Ala Ile Glu Met Leu Arg Ser Leu Ser Gly Lys Ser His Gln Val Ile
 115 120 125
 Thr Gly Val Cys Leu Thr Thr Arg Glu Trp Gln Lys Cys Phe Ala Ala
 130 135 140
 Val Thr Asp Val Arg Phe Ala Ile Leu Asp Glu Asp Glu Ile Ala Tyr
 145 150 155 160
 Tyr Val Asp His Tyr Gln Pro Met Asp Lys Ala Gly Ser Tyr Gly Val
 165 170 175
 Gln Glu Trp Ile Gly Phe Val Gly Val Glu Ser Ile Ser Gly Ser Tyr
 180 185 190
 Phe Asn Val Met Gly Leu Pro Ile Gln Lys Leu Tyr Arg Glu Leu Lys
 195 200 205
 Gln Leu
 210

<210> 9736
 <211> 200
 <212> PRT
 <213> B.fragilis

<400> 9736

Ser Ser Arg Ile Ser His Ile Asp Gly Gly Ile Gly Val Ile Gln Pro
 1 5 10 15
 Val Lys Glu Lys Ile Ile Leu Gly Ile Asp Pro Gly Thr Thr Ile Met
 20 25 30

Gly Tyr Gly Val Leu Arg Val Cys Gly Thr Arg Pro Glu Met Ile Ala
 35 40 45
 Met Gly Ile Ile Asp Leu Arg Lys Phe Gly Asn His Tyr Leu Lys Leu
 50 55 60
 Arg His Ile His Glu Arg Val Leu Ser Ile Ile Glu Ser Tyr Leu Pro
 65 70 75 80
 Asp Glu Leu Ala Ile Glu Ala Pro Phe Phe Gly Lys Asn Val Gln Ser
 85 90 95
 Met Leu Lys Leu Gly Arg Ala Gln Gly Val Ala Met Ala Ala Ala Leu
 100 105 110
 Ser Arg Asp Ile Pro Ile Thr Glu Tyr Ala Pro Leu Lys Ile Lys Met
 115 120 125
 Ala Ile Thr Gly Asn Gly Gln Ala Ser Lys Glu Gln Val Ala Asp Met
 130 135 140
 Leu Gln Arg Met Leu His Phe Ala Lys Glu Asp Met Pro Val Phe Met
 145 150 155 160
 Asp Ala Thr Asp Gly Leu Ala Ala Ala Tyr Cys His Phe Leu Gln Met
 165 170 175
 Gly Arg Pro Val Met Glu Lys Gly Tyr Ser Gly Trp Lys Asp Phe Ile
 180 185 190
 Ala Lys Asn Pro Glu Arg Val Lys
 195 200

<210> 9737
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 9737
 Lys Phe Ile Val Ser Glu Leu Lys Ile Leu Cys Lys Ser Lys Asn Asn
 1 5 10 15
 Pro Leu Asn Arg Glu Thr Leu Gly Arg Lys Tyr Pro Phe Glu Glu Arg
 20 25 30
 Asn Ser Ile Leu Phe Gln Ile Ile Ser His Pro Leu Arg Ala Val Cys
 35 40 45
 Asn Val Tyr Val Ala Asn Lys Gly Phe Leu Leu Phe Pro His Ile Tyr
 50 55 60
 Asn Gly Arg Gln Met Ile Ala Val Thr Ile Gln Pro His Ser Ala Thr
 65 70 75 80
 Ile Cys Thr Gln Gly Cys Thr Leu Ile Phe Thr Ile Leu Leu Lys Gln
 85 90 95
 Val Ile Ala His Glu Asn Phe Ile Val Ile Ile Phe Gln Ser Phe Cys
 100 105 110
 Cys Leu Lys Gln Ser Gly
 115

<210> 9738
 <211> 308
 <212> PRT
 <213> B.fragilis

<400> 9738
 Thr Ser Ile Val Met Asn Lys Lys Arg Ile Gly Ile Phe Ile Ala Leu
 1 5 10 15
 Leu Ala Met Val Cys Met Gly Leu Arg Ala Gln Ser Ala Thr Ser Leu
 20 25 30
 Arg Ile Asn Glu Val Leu Val Val Asn Asp Gln Asn Tyr Gln Asp Asp
 35 40 45
 Tyr Gly Leu His Asn Ala Trp Ile Glu Ile Phe Asn Thr Ser Phe Ala

50 55 60
 Ser Val Asn Leu Glu Gly Cys Phe Leu Thr Asn Asp Lys Asn Asn Pro
 65 70 75 80
 Thr Lys Tyr Pro Ile Pro Lys Gly Asp Val Leu Thr Leu Ile Lys Pro
 85 90 95
 Arg Gln His Ala Leu Phe Trp Ala Asp Gly Met Pro Asn Arg Gly Thr
 100 105 110
 Phe His Val Asn Phe Thr Leu Asp Pro Asn Lys Glu Asn Tyr Ile Ala
 115 120 125
 Leu Tyr Asp Ser Asn Gly Lys Thr Leu Ile Asp Glu Val Thr Ile Pro
 130 135 140
 Ala Gly Gln Leu Ala Asp Arg Ser Tyr Ala Arg Glu Lys Asp Gly Ser
 145 150 155 160
 Ala Asn Trp Val Val Lys Gly Glu Gly Glu His Ser Tyr Val Thr Pro
 165 170 175
 Ser Thr Asn Asn Met Thr Ile Asp Lys Asn Pro Lys Ile Glu Asn Phe
 180 185 190
 Lys Lys His Asp Ser Ile Gly Ile Gly Met Ala Ile Ile Ala Met Ser
 195 200 205
 Val Val Phe Ile Gly Leu Val Leu Leu Tyr Leu Ser Phe Lys Ala Val
 210 215 220
 Gly Asn Val Ala Val Arg Leu Gly Lys Lys Asn Ala Met Lys Ala Thr
 225 230 235 240
 Gly Ile Thr Asp Lys Thr Glu Ala Lys Glu Lys Asn Leu Gly Ser His
 245 250 255
 Thr Gly Glu Glu Thr Ala Ala Ile Ala Met Ala Leu His Glu Tyr Leu
 260 265 270
 Asn Asp Ala His Asp Val Glu Asp Met Ile Leu Thr Ile Asn Lys Val
 275 280 285
 Lys Arg Thr Tyr Ser Pro Trp Ser Ser Lys Ile Tyr Thr Leu Arg Gln
 290 295 300
 Thr Pro Lys Arg
 305

<210> 9739
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 9739
 Ser Ala Phe Ser Cys Ile Leu Ile Val Thr Glu Ala Ser Pro Ala Val
 1 5 10 15
 Pro Glu Asn Gly Asp Thr Val His Gln Ser Ala Ala Leu Arg Val Ser
 20 25 30
 Val Ser Val Val Ser Glu Ile Arg His Gly Arg Pro Asp Glu Asn Asp
 35 40 45
 Arg Phe Arg Val Pro Glu Val Ala Ala Lys Ser Met Pro Cys Ser Lys
 50 55 60
 Lys Ile Ser Leu Ser Glu Glu Arg Ile Arg Glu Ser Val Ser Phe Ser
 65 70 75 80
 Ser Asp Glu Gln Pro Lys Pro Ile Ser Gly Ser Arg Arg Asn Arg Asn
 85 90 95
 Gly Lys Val Lys Tyr Phe Ile Asp
 100

<210> 9740
 <211> 363
 <212> PRT
 <213> B.fragilis

<400> 9740

Arg Phe Ile Ser Leu Glu Ile Glu Glu Ser Val Leu Ile Arg Val Ile
 1 5 10 15
 Cys Gly Glu Leu Lys Asn Lys Tyr Met Lys Lys Leu Ile Ile Ala Phe
 20 25 30
 Asn Phe Leu Leu Leu Ala Val Gly Gly Arg Ala Gln Asp His Ala
 35 40 45
 Asp Gly Leu Tyr Ser Val Ala Phe Tyr Asn Leu Glu Asn Leu Phe Asp
 50 55 60
 Thr Ile His Asp Thr Gly Lys Asn Asp Tyr Glu Tyr Leu Pro Asp Ala
 65 70 75 80
 Ala Lys Gly Trp Asn Ser Glu Lys Tyr Cys Ser Lys Leu Lys Asn Leu
 85 90 95
 Ser Lys Val Leu Gly Glu Leu Ser Arg Asp Lys Val Pro Ala Gly Pro
 100 105 110
 Ala Ala Ile Gly Val Ala Glu Val Glu Asn Trp Arg Val Leu Asp Asp
 115 120 125
 Leu Ile Arg Gln Pro Glu Leu Ala Ala Gly Gly Tyr Arg Tyr Ile His
 130 135 140
 Tyr Glu Gly Pro Asp Lys Arg Gly Ile Asp Cys Ala Leu Leu Tyr Asp
 145 150 155 160
 Pro Lys Gln Phe Thr Pro His Ala Thr Ala Leu Val Leu Ser Thr Pro
 165 170 175
 Phe Glu Gly Asp Thr Ile His Lys Thr Arg Gly Phe Leu Ile Val Gly
 180 185 190
 Gly Glu Leu Ala Gly Asp Lys Val Cys Leu Ile Val Asn His Trp Pro
 195 200 205
 Ser Arg Gly Ala Ala Glu Pro Val Arg Val His Ala Ala Met Gln Val
 210 215 220
 Lys Ala Leu Lys Asp Ser Leu Met Arg Thr Asp Pro Asp Leu Lys Leu
 225 230 235 240
 Ile Ile Met Gly Asp Leu Asn Asp Asp Pro Met Asp Leu Ser Leu Ala
 245 250 255
 Val Leu Gly Ala Lys Lys His Val Glu Asp Met Thr Glu Asp Asp Leu
 260 265 270
 Tyr Asn Pro Trp Trp Val Thr Leu Glu Asp Lys Gly Val Gly Thr Leu
 275 280 285
 Leu Tyr Arg Gly Lys Trp Asn Leu Phe Asp Gln Ile Ile Leu Ser Ser
 290 295 300
 Thr Leu Leu Gln Ala Thr Lys Gly Leu Lys Tyr Asp His Asn Glu Val
 305 310 315 320
 Phe Met Arg Asp Tyr Leu Phe Gln Gln Asp Gly Lys Tyr Lys Gly Ala
 325 330 335
 Pro Leu Arg Thr Tyr Gly Gly Arg Val Trp Leu Asp Gly Tyr Ser Asp
 340 345 350
 His Leu Pro Thr Ile Ile Tyr Met Arg Lys Gln
 355 360

<210> 9741

<211> 353

<212> PRT

<213> B.fragilis

<400> 9741

Ser Val Ser Ser Leu Ser Thr Leu Pro Val Ala Lys Glu Phe Glu Pro
 1 5 10 15
 Met Leu Leu Ile Pro Ile Gly Phe Gly Ile Leu Ile Gly Asn Ile Pro
 20 25 30

Phe Asn Met Glu Ala Gly Leu Lys Val Gly Ile Tyr Glu Glu Gly Ser
 35 40 45
 Val Leu Asn Ile Leu Tyr Gln Gly Val Thr Ser Gly Trp Tyr Pro Pro
 50 55 60
 Leu Ile Phe Leu Gly Ile Gly Ala Met Thr Asp Phe Ser Ala Leu Ile
 65 70 75 80
 Ser Asn Pro Lys Leu Met Leu Ile Gly Ala Ala Gln Phe Gly Ile
 85 90 95
 Phe Gly Ala Tyr Ile Ile Ala Leu Leu Ile Gly Phe Glu Pro Asn Gln
 100 105 110
 Ala Gly Ala Ile Gly Ile Ile Gly Gly Ala Asp Gly Pro Thr Ala Ile
 115 120 125
 Phe Leu Ser Ser Lys Leu Ala Pro Asn Leu Met Gly Ala Ile Ala Val
 130 135 140
 Ser Ala Tyr Ser Tyr Met Ala Leu Val Pro Val Ile Gln Pro Pro Ile
 145 150 155 160
 Met Arg Ala Leu Thr Thr Lys His Glu Arg Leu Ile Arg Met Lys Pro
 165 170 175
 Pro Arg Ile Val Ser His Thr Glu Lys Val Ile Phe Pro Ile Val Gly
 180 185 190
 Leu Leu Leu Thr Cys Phe Leu Val Pro Ser Gly Leu Pro Leu Leu Gly
 195 200 205
 Met Leu Phe Phe Gly Asn Leu Lys Glu Ser Gly Val Thr Arg Arg
 210 215 220
 Leu Ala Asn Thr Ala Ser Gly Pro Leu Ile Asp Val Ile Thr Ile Leu
 225 230 235 240
 Leu Gly Leu Thr Val Gly Ala Ser Thr Gln Ala Ser Gln Phe Leu Thr
 245 250 255
 Trp Asp Ser Ile Leu Ile Phe Ile Leu Gly Ala Phe Ser Phe Ile Ile
 260 265 270
 Ala Thr Ala Ser Gly Val Met Phe Val Lys Phe Phe Asn Leu Phe Leu
 275 280 285
 Lys Lys Gly Asn Lys Ile Asn Pro Leu Ile Gly Asn Ala Gly Val Ser
 290 295 300
 Ala Val Pro Asp Ser Ala Arg Ile Ser Gln Val Ile Gly Leu Glu Tyr
 305 310 315 320
 Asp Pro Thr Asn Tyr Leu Leu Met His Ala Met Gly Pro Asn Val Ala
 325 330 335
 Gly Val Ile Gly Ser Ala Val Ala Ala Gly Ile Leu Leu Gly Phe Leu
 340 345 350
 Met

<210> 9742

<211> 194

<212> PRT

<213> B.fragilis

<400> 9742

Ser Met Trp Pro Leu Phe Ile His Glu Gly Asp Asn Glu Ile Ala Met
 1 5 10 15
 Val Val Ser Asn Arg Ser Gly Ala Gly Gly Leu Leu Lys Gly Val Arg
 20 25 30
 Leu Lys Gln Glu Phe Glu Val Ile Lys Lys Leu Asn Trp Glu Val Ser
 35 40 45
 Thr Asp Leu Gly Gly Ile Cys Gln Asp Trp Asn Leu Gly Thr Gly Ser
 50 55 60
 Thr Glu Gly Trp Ser Val Val Lys Leu Ser Ala Asp Tyr Pro Leu Val
 65 70 75 80

Arg Lys Gly Glu Leu Thr Gly Thr Val Asp Gly Gly Arg Asp Ala Leu
 85 90 95
 Leu Thr Trp Tyr Arg Leu Glu Phe Asn Met Pro Arg Lys Asn Pro Ser
 100 105 110
 Val Trp Ile Pro Trp Lys Leu Ile Val Asn Ala Thr Gly Thr Gly Tyr
 115 120 125
 Met Trp Leu Asn Gly His Asn Ile Gly Arg Tyr Trp Glu Glu Gly Pro
 130 135 140
 Gln Arg Glu Phe Tyr Leu Pro Glu Cys Trp Leu Arg Ala Gly Glu Lys
 145 150 155 160
 Asn Val Ile Ile Leu Gly Leu Arg Gln Ser Glu Thr Lys Gly Ala Cys
 165 170 175
 Leu Phe Gly Ala Glu Val Ala Pro Tyr Thr Glu Asp Val Glu Cys Met
 180 185 190
 Glu Gln

<210> 9743
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9743
 Thr Asp Arg Thr Leu Tyr Arg Tyr Arg Pro Ser Gly Arg Asp Cys Asp
 1 5 10 15
 Cys Thr Cys Arg Asn Arg Arg Leu Ile Ile Thr Ser Phe Lys Asn Val
 20 25 30
 Lys Cys Asn Arg Met Lys Lys Leu Ala Ile Leu Leu Val Cys Ala Ala
 35 40 45
 Met Leu Ala Ser Cys Asn Gly Leu Gly Gly Gly Ser Lys Asp Met Lys
 50 55 60
 Ala Lys Lys Leu Ile Leu Phe Leu Met Glu Phe Asp Pro Gln Glu Arg
 65 70 75 80
 Arg Ile Gly

<210> 9744
 <211> 250
 <212> PRT
 <213> B.fragilis

<400> 9744
 Trp Ser Leu Thr His Lys Asn Ala Glu Leu Asp Glu Met Met Gly Thr
 1 5 10 15
 Phe Asn Glu Val Gln Glu Gly Phe Arg Lys Ile Asn Ala Ala Glu Ser
 20 25 30
 Arg Val Asp Leu Thr Arg Gly Thr Ile Ser Glu Asn Ser Ala Thr Ala
 35 40 45
 Lys Gln Gln Ile Ala Ser Asp Ile Glu Phe Ile Thr Lys Gln Met Glu
 50 55 60
 Glu Asn Lys Ala Gln Ile Ala Lys Leu Gln Ala Met Leu Lys Ser Ser
 65 70 75 80
 Lys Asn Asn Ser Ala Gln Leu Lys Lys Ala Val Glu Ser Leu Thr Gln
 85 90 95
 Glu Leu Val Ala Lys Thr Gln Arg Ile Glu Glu Leu Gln Ala Glu Leu
 100 105 110
 Ala Ser Lys Asn Ile Arg Ile Gln Glu Leu Asp Ala Ala Val Thr Gly
 115 120 125
 Leu Thr Ala Asp Lys Glu Ser Leu Ala Ala Glu Asn Glu Ala Lys Ala

130 135 140
 Lys Thr Val Ala Glu Gln Asp Lys Ala Ile Asn Ser Ala Trp Phe Val
 145 150 155 160
 Phe Gly Thr Lys Ser Glu Leu Lys Thr Gln Lys Ile Leu Glu Lys Gly
 165 170 175
 Asp Val Leu Lys Ser Ala Asp Phe Asn Lys Asp Tyr Phe Thr Gln Ile
 180 185 190
 Asp Ile Arg Thr Thr Lys Glu Ile Lys Leu Tyr Ser Lys Arg Ala Glu
 195 200 205
 Leu Leu Thr Thr His Pro Ala Lys Ser Tyr Glu Leu Val Lys Asp Asp
 210 215 220
 Lys Gly Gln Leu Thr Leu Lys Ile Thr Asn Pro Lys Glu Phe Trp Ser
 225 230 235 240
 Val Ser Lys Tyr Leu Val Ile Gln Val Lys
 245 250

<210> 9745
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 9745

Glu Arg Ser Ala Leu Ala Gly Tyr Thr Glu Leu Pro Tyr Leu Cys Ser
 1 5 10 15
 Arg Phe Lys Lys Arg Ile Ile Met Glu Leu Pro Glu Asp Pro Met Met
 20 25 30
 Leu Phe Ser Val Ile Asn Met Lys Leu Arg Asp Cys Tyr Ala Ser Leu
 35 40 45
 Asp Glu Leu Cys Glu Asp Met Asn Ile Ser Lys Asp Ile Leu Ile Gly
 50 55 60
 Lys Leu Glu Ser Ile Gly Phe Glu Tyr Asn Ala Glu Gln Asn Lys Phe
 65 70 75 80
 Trp

<210> 9746
 <211> 783
 <212> PRT
 <213> B.fragilis

<400> 9746

Gly Glu Lys Ala Met Lys Tyr Arg Ile Leu Val Leu Thr Ala Ile Leu
 1 5 10 15
 Phe Thr Ala Cys Asn Leu Leu His Ala Gln Val Gln Thr Gly Lys Leu
 20 25 30
 Ser Gly Val Ile Ile Asp Ala Asn Asn Glu Glu Thr Leu Val Gly Ala
 35 40 45
 Asn Ile Tyr Val Glu Ser Leu Lys Lys Gly Thr Ser Thr Asp Lys Asn
 50 55 60
 Gly Glu Phe Ser Ile Glu Val Pro Ala Gly His Tyr Arg Ile Val Ile
 65 70 75 80
 Ser Tyr Met Gly Tyr Arg Thr Arg Gln Glu Glu Val Arg Ile Ser Glu
 85 90 95
 Leu Lys Thr Lys Lys Leu Val Ile Arg Leu Glu Pro Glu Thr Gln Ser
 100 105 110
 Leu Gly Glu Val Val Val Thr Ala Lys Ser Glu Ala Arg Gln Leu Arg
 115 120 125
 Glu Gln Ala Met Pro Met Ser Val Ile Ser Met Gln Gln Leu Gln Gly
 130 135 140

Thr Val Ser Asn Val Gln Asp Val Leu Ser Lys Thr Val Gly Val Thr
 145 150 155 160
 Ile Arg Asn Thr Gly Gly Val Gly Ser Ser Ser Arg Val Ser Val Arg
 165 170 175
 Gly Leu Glu Gly Lys Arg Ile Gly Phe Phe Ile Asp Gly Ser Pro Met
 180 185 190
 Asn Asp Asn Ser Asp Phe Ile Asp Ile Asn Asp Ile Pro Val Asp Met
 195 200 205
 Ile Asp Arg Ile Glu Ile Tyr Lys Gly Val Val Pro Ala Arg Phe Gly
 210 215 220
 Gly Ser Ser Val Gly Gly Ala Val Asn Ile Val Ile Arg Glu Tyr Pro
 225 230 235 240
 Pro Lys Tyr Leu Asp Ala Ser Tyr Ser Ile Glu Ser Phe Asn Thr His
 245 250 255
 Lys Leu Ser Leu Val Thr Lys Arg Asn Ile Ala Thr Lys Gly Leu Glu
 260 265 270
 Phe Gly Gly Gly Gly Phe Tyr Thr Tyr Ser Asp Asn Asn Tyr Lys Met
 275 280 285
 Glu Ser Pro Phe Glu Glu Gly Leu Ile Ile Lys Arg Asn His Asp Lys
 290 295 300
 Phe Lys Lys Leu Ala Val Ala Gly Ser Leu Lys Ala Arg Lys Trp Trp
 305 310 315 320
 Phe Asp Leu Ala Glu Phe Glu Pro Val Phe Ile His Thr Phe Lys Glu
 325 330 335
 Ile Gln Gly Ile Glu Tyr Asn Ile Glu Lys Ala His Thr Tyr Ser Asp
 340 345 350
 Ala Phe Ile Phe Ala Asn Lys Leu Glu Lys Glu Asn Phe Leu Thr Glu
 355 360 365
 Gly Leu Asp Met Glu Ser Asn Leu Ala Tyr Ala Tyr Thr Val Phe His
 370 375 380
 Met Val Asp Thr Ala Ala Tyr Arg Tyr Asn Trp Asp Gly Thr Thr Tyr
 385 390 395 400
 Pro Ala Val Ser Glu Tyr Gly Gly Glu Ile Gly Lys Trp Ala Ser Asn
 405 410 415
 Ala Arg Asn Glu Lys His Thr Ile Thr His Lys Leu His Leu Asn Tyr
 420 425 430
 Val Ile Asn Asn Asn His Ser Ile Asn Leu Asn Ser Leu Phe Ser Phe
 435 440 445
 Ala Ser Gly His Pro Lys Asp Asp Leu Lys Asn Lys Val Val Gly Tyr
 450 455 460
 Lys Thr Asn Phe Arg Ser Thr Met Ala Ser Trp Ile Ala Gly Leu Gly
 465 470 475 480
 Tyr Asp Phe Arg Thr Asp Asn Asp Ile Phe Leu Asn Ser Leu Asn Val
 485 490 495
 Lys Tyr Tyr Met Tyr Gly Met Asn Thr His Met Ser Ser Ile Met Ser
 500 505 510
 Ser Glu Ala Glu Lys Val Asp Met Leu Lys Arg Asp Phe Gly Ile Ser
 515 520 525
 Asn Ala Leu Arg Tyr Arg Phe Thr Pro Asp Phe Met Gly Lys Leu Ser
 530 535 540
 Val Gly Tyr Asp Val Arg Leu Pro Ala Glu Ser Glu Leu Leu Gly Asp
 545 550 555 560
 Gly Tyr Thr Val Ala Pro Ser Gly Asn Leu Leu Pro Glu Arg Asn Thr
 565 570 575
 Ser Val Asn Leu Gly Phe Leu Leu Asp Arg Thr Glu Lys Asp Ala Ser
 580 585 590
 Asn Leu Gln Val Glu Val Asn Thr Phe Tyr Gly Tyr Leu Glu Asn Met
 595 600 605
 Ile Arg Phe Thr Gly Gly Tyr Leu Gln Ser Gln Tyr Gln Asn Phe Gly

610		615		620
Lys Met Arg Thr Leu Gly Val Glu Val Glu Val Lys Ala Asp Leu Thr				
625		630		635
His Trp Leu Tyr Gly Tyr Cys Asn Met Thr Tyr Gln Asp Leu Arg Asp				
	645		650	655
Val Arg Lys Phe Glu Pro Asn Thr His Ile Thr Asn Pro Thr Lys Gly				
	660		665	670
Ser Arg Met Pro Asn Ile Pro Tyr Leu Leu Ala Asn Ala Gly Leu Glu				
	675		680	685
Tyr His Lys Glu Asn Leu Phe Gly Gly Lys Gly Gln Asn Thr Arg Ile				
	690		695	700
Phe Thr Asp Gly Ser Phe Val Glu Glu Tyr Phe Tyr Asp Phe Glu Gln				
705		710		715
Ser Arg Phe Gln Glu Arg Arg Ile Pro Arg Thr Phe Ser Ala Asn Ile				
	725		730	735
Gly Ile Glu His Ser Phe Met Asn Gly Arg Phe Ile Ile Ser Ala Arg				
	740		745	750
Met Asn Asn Leu Thr Asp Ala Arg Met Met Ser Glu Phe Asn Arg Pro				
	755		760	765
Leu Pro Gly Arg Asn Trp Gly Val Arg Leu Arg Tyr Val Leu Lys				
770		775		780

<210> 9747
 <211> 253
 <212> PRT
 <213> B.fragilis

<400> 9747

Leu Ile Arg Ala Arg Ile Ala Gln Gln Val Val Arg Ala Phe Phe Leu		
1	5	10
Asn Cys Thr Arg Tyr Phe Asn Met Lys Tyr Lys Asn Leu Phe Phe Asp		
	20	25
Leu Asp Asp Thr Leu Trp Ala Phe Ser Gln Asn Ala Tyr Asp Thr Phe		
	35	40
Glu Glu Val Tyr Asp Lys Tyr Arg Leu Gly Gln Tyr Phe Asp Ser Phe		
	50	55
Ser His Phe Tyr Ser Leu Tyr Gln Arg Arg Asn Thr Glu Leu Trp Val		
65	70	75
Glu Tyr Gly Asn Gly Gln Val Thr Lys Glu Glu Leu Asn Arg Gln Arg		
	85	90
Phe Leu Tyr Pro Leu Gln Ala Val Gly Ile Asp Asn Glu Met Leu Ala		
	100	105
Lys Arg Tyr Ser Asp Asp Phe Phe Ser Ile Ile Pro Thr Lys Ser Arg		
	115	120
Leu Met Pro Tyr Ala Glu Glu Val Leu Ser Tyr Leu Ala Pro Lys Tyr		
	130	135
Asn Leu Tyr Ile Leu Ser Asn Gly Phe Arg Glu Leu Gln Ser Arg Lys		
145	150	155
Met Arg Ser Ser Gly Ile Asp Thr Tyr Phe Asn Lys Ile Ile Leu Ser		
	165	170
Glu Asp Leu Gly Val Met Lys Pro Trp Pro Glu Ile Phe Tyr Phe Ala		
	180	185
Leu Ser Ala Thr Gln Ser Glu Leu Arg Glu Ser Leu Met Ile Gly Asp		
	195	200
Ser Trp Glu Ala Asp Ile Thr Gly Ala Asn Gly Ile Gly Met His Gln		
	210	215
Ala Tyr Tyr Asn Val Ser Gly Arg Ala Asp Phe Pro Phe Arg Pro Thr		
225	230	235
Tyr Leu Val Thr Asp Leu Lys Glu Leu Met Glu Leu Leu		

245

250

<210> 9748
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 9748

Ala Ile Ser Tyr Asn Lys Met Gln Ser Val Arg Ala Arg Pro His Arg
 1 5 10 15
 His Ile Arg Pro Gly Arg Glu Val Leu Arg Met Asn His Leu Ser Asp
 20 25 30
 Gly Ile Leu Arg Gly Leu Leu His Val Pro Ile Lys Ser Leu Lys Ser
 35 40 45
 Gly Trp Gly Glu Lys Lys Lys Leu Leu Val Asp Glu Leu Ser Thr Arg
 50 55 60
 Gly Arg
 65

<210> 9749
 <211> 722
 <212> PRT
 <213> B.fragilis

<400> 9749

Ser Tyr Tyr Lys Ile Val Ser Thr Tyr Tyr Ser Ser Ala Lys Thr Leu
 1 5 10 15
 Gln Ile Ser Tyr Ile Gly Met Gln Thr Ala Glu Val Ala Ile Ala Pro
 20 25 30
 Val Ile Lys Val Ile Leu Lys Thr Asp Ala Lys Ala Leu Asp Glu Val
 35 40 45
 Val Val Thr Ala Met Gly Ile Ser Lys Glu Lys Lys Ala Leu Gly Tyr
 50 55 60
 Ala Val Gln Asp Val Lys Gly Asp Lys Leu Thr Gln Ala Ser Ser Ser
 65 70 75 80
 Asn Leu Ser Ser Ala Leu Gln Gly Lys Val Ser Gly Val Glu Ile Ser
 85 90 95
 Pro Ser Ser Gly Met Pro Gly Ala Ser Ser Lys Met Thr Ile Arg Gly
 100 105 110
 Ser Arg Ser Phe Thr Gly Asp Asn Thr Pro Leu Tyr Val Val Asp Gly
 115 120 125
 Met Pro Ile Ser Ser Ser Thr Asp Leu Asp Thr Phe Asn Ser Val Thr
 130 135 140
 Gly Ser Asp Tyr Ala Asn Arg Ala Val Asp Ile Asp Pro Asn Asp Ile
 145 150 155 160
 Glu Ser Ile Asn Ile Leu Lys Gly Gln Ala Ala Ser Ala Leu Tyr Gly
 165 170 175
 Met Arg Ala Ser Asn Gly Val Val Val Ile Thr Thr Lys Ser Gly Lys
 180 185 190
 Gly Ala Arg Lys Gly Lys Pro Glu Val Thr Ile Asn Thr Gly Leu Ser
 195 200 205
 Phe Asp Lys Val Ser Thr Met Pro Asp Phe Gln Lys Glu Phe Ala Gln
 210 215 220
 Gly Phe Asn Gly Ala Phe Ser Pro Ser Asp Ser Arg Ser Trp Gly Pro
 225 230 235 240
 Leu Ile Ser Glu Leu Ala Asn Asp Pro Lys Tyr Gly Gly Asn Thr Asp
 245 250 255
 Asn Ser Tyr Thr Gln Lys Phe Gly Lys His Gln Gly Gln Tyr Tyr Val
 260 265 270

Asp Gln Arg Ala Lys Ala Gly Leu Asp Pro Trp Ala Thr Pro Arg Ala
 275 280 285
 Tyr Asp Asn Ala Lys Asp Phe Phe Asn Thr Gly Val Thr Trp Asn Ser
 290 295 300
 Ser Ala Asn Val Ala Gln Ser Leu Asp Lys Gly Ser Tyr Ser Leu Ser
 305 310 315 320
 Leu Gly Ser Thr Thr Ala Asn Gly Ile Val Pro Ser Thr Gly Met Asp
 325 330 335
 Arg Tyr Asn Ala Lys Leu Thr Ala Gln Ala Gln Leu Ser Lys Asn Trp
 340 345 350
 Ser Thr Gly Phe Asn Gly Asn Phe Val Tyr Ser Lys Ile Lys Lys Gln
 355 360 365
 Thr Gly Ala Asn Asn Gly Ile Met Ala Thr Val Tyr Gly Ala Pro Ser
 370 375 380
 Ser Tyr Asp Leu Gly Gly Ile Pro Ser His Ile Asp Gly Asp Pro Tyr
 385 390 395 400
 Thr Gln Asn Thr Tyr Arg Ser Thr Gly Gly Phe Asp Gly Ala Tyr Trp
 405 410 415
 Ala Val Glu Asn Asn Ser Phe Lys Glu Arg Thr Gln Arg Phe Phe Gly
 420 425 430
 Asn Ala Phe Ala Lys Tyr Ser Thr Asp Phe Gly Thr Glu Asn His Lys
 435 440 445
 Leu Asp Val Lys Tyr Gln Leu Gly Thr Asp Ala Tyr Thr Thr Asn Tyr
 450 455 460
 Thr Asp Thr Trp Gly Tyr Gly His Ser Asn Gly Thr Gly Ser Ile Glu
 465 470 475 480
 Glu Gln Ser Val Thr Asn Asn Glu Ile Asn Ser Leu Leu Thr Val Thr
 485 490 495
 Tyr Asp Trp Lys Ile Thr Pro Glu Leu Asp Leu Asn Val Leu Tyr Gly
 500 505 510
 Asn Glu Leu Val Asp Asn Ser Ser Lys Tyr Lys Tyr Asn Leu Gly Ser
 515 520 525
 Asn Phe Asn Phe Pro Gly Trp Asn His Ile Ala Asn Ala Ser Ile Tyr
 530 535 540
 Ser Ser Thr Gly Thr Tyr His Arg Glu Arg Thr Val Gly Asn Phe Gly
 545 550 555 560
 Asn Ile Ser Leu Ala Tyr Arg Asn Met Leu Tyr Leu Asn Ala Thr Val
 565 570 575
 Arg Asn Asp Ile Val Ser Ser Met Pro Arg Asn Asn Arg Ser Phe Thr
 580 585 590
 Tyr Pro Ser Val Ser Leu Gly Phe Ile Phe Thr Glu Leu Glu Ala Leu
 595 600 605
 Lys Asn Asp Val Leu Thr Tyr Gly Lys Ile Arg Ala Ser Tyr Ala Glu
 610 615 620
 Val Gly Gln Ala Gly Thr Tyr Tyr Pro Ser Tyr Tyr Arg Thr Pro Val
 625 630 635 640
 Tyr Gly Gly Gly Phe Ser Ser Gly Thr Pro Ile Gln Tyr Pro Ile Gly
 645 650 655
 Ser Ile Ser Ser Tyr Ile Pro Tyr Tyr Lys Ile Tyr Asp Pro Asn Leu
 660 665 670
 Lys Pro Gln Asn Thr Lys Ser Tyr Glu Ile Gly Ala Asp Phe Ser Phe
 675 680 685
 Trp Asn Gly Leu Ile Ser Leu Asn Tyr Thr Tyr Ser Cys Gln Asn Val
 690 695 700
 Lys Val Gln Ile Phe Gln Ser Thr Leu Gly Leu Leu Phe Thr Asp Ile
 705 710 715 720
 Arg Asp

<210> 9750
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 9750

Tyr Val Leu Lys Ser Pro Pro Met Leu Leu Asn Ala Val Ala Val Ile
 1 5 10 15
 Thr Ser Ala Lys Met Asn Leu Ala Gly Thr Leu Val Val Trp Ser Leu
 20 25 30
 Ser Leu Leu Met Leu Ser Ile Val Ser Ser Glu Gln Glu Ala Asn Ala
 35 40 45
 Thr Glu Ile Asn Ala Thr Asp Lys Ile Pro Phe Asp Lys Leu Asn Ile
 50 55 60
 Asp Phe Ile Phe Val Leu Phe Arg Ile
 65 70

<210> 9751
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 9751

Ser Ser Glu Asn Asn Thr Met Leu Met Tyr Val Ile Ile Ala Cys Lys
 1 5 10 15
 Ser Asn Ser Phe Ile Gly Phe Ser Val Phe Phe His Tyr Leu Phe Leu
 20 25 30
 His Leu Pro Ser His Ser Lys Arg Asn Ser Asp Val Asp Met Gln Ala
 35 40 45
 Leu Leu Asn Asp Ile Glu Leu Asp Ile Gln Glu Leu Lys Tyr Leu Met
 50 55 60
 Glu Ile Ile Ser Arg Glu Pro Asp Ser Val Leu Arg Gly Val Ala Arg
 65 70 75 80
 Arg Asn Ile Val Gln Met Arg Gly Arg Leu Asp Ala Leu Leu Glu Leu
 85 90 95
 Leu Asp Ala Lys Pro Val Ile Ala Ala Asp Ala Ser Glu Ser Pro Glu
 100 105 110
 Asn Arg Pro Val Thr Glu Thr Ile Glu Val Val Glu Ile Pro Ala Leu
 115 120 125
 Lys Glu Thr Val Ala Asp Ile Pro Glu Lys Asn Glu Glu Ala Ala Val
 130 135 140
 Ala Glu Asp Ser Gln Glu Ala Val Glu Pro Gly Pro Leu Ser Leu Ser
 145 150 155 160
 Glu Ala Val Ile Glu Gln Leu Pro Thr Val Glu Leu Asp Pro Val Ala
 165 170 175
 Asp Glu Lys Glu Glu Val Phe Glu Ser Val Ser Val Pro Gln Ser Glu
 180 185 190
 Glu Pro Thr Val Lys Val Glu Thr Arg Val Ala Ser Ser Pro Ile Leu
 195 200 205
 Ala Glu Arg Ile Lys Thr Ala Gly Asp Leu Arg Arg Ser Ile Ser Leu
 210 215 220
 Asn Asp Ser Phe Arg Phe Ser Arg Glu Leu Phe Gly Gly Ser Met Glu
 225 230 235 240
 Gln Met Asn Asn Val Leu His Gln Ile Gly Glu Met Ser Ser Leu Asp
 245 250 255
 Ala Ala Leu Val Phe Leu Ser Ser Lys Ile Lys Val Asp Glu Glu Asn
 260 265 270
 Glu Ala Met Asn Asp Phe Val Glu Leu Leu Arg Lys His Phe Ile
 275 280 285

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<210> 9752
 <211> 219
 <212> PRT
 <213> B.fragilis

<400> 9752

Lys Asn Thr Glu Lys Pro Ile Lys Leu Leu Leu Gln Ala Ile Ile
 1 5 10 15
 Thr Tyr Ile Ser Met Val Leu Phe Ser Glu Asp His Ile Gln Glu Thr
 20 25 30
 Arg Arg Arg Gly Arg Ile Glu Val Ile Cys Gly Ser Met Phe Ser Gly
 35 40 45
 Lys Thr Glu Glu Leu Ile Arg Arg Met Lys Arg Ala Lys Phe Ala Arg
 50 55 60
 Gln Arg Val Glu Ile Phe Lys Pro Ala Ile Asp Thr Arg Tyr Ser Glu
 65 70 75 80
 Gly Asp Val Val Ser His Asp Ser Asn Ser Ile Ser Ser Thr Pro Ile
 85 90 95
 Asp Ser Ser Ala Ser Ile Leu Leu Phe Thr Ser Glu Ile Asp Val Val
 100 105 110
 Gly Ile Asp Glu Ala Gln Phe Phe Asp Ser Gly Leu Ile Asp Val Cys
 115 120 125
 Asn Gln Leu Ala Asn Asn Gly Val Arg Val Ile Ile Ala Gly Leu Asp
 130 135 140
 Met Asp Phe Lys Gly Val Pro Phe Gly Pro Met Pro Ala Leu Cys Ala
 145 150 155 160
 Ile Ala Asp Glu Val Ser Lys Val His Ala Ile Cys Val Lys Cys Gly
 165 170 175
 Gln Leu Ala Ser Phe Ser His Arg Thr Val Lys Asn Asp Lys Gln Val
 180 185 190
 Leu Leu Gly Glu Thr Ala Gln Tyr Glu Pro Leu Cys Arg Glu Cys Tyr
 195 200 205
 Gln Arg Ala Leu Gln Glu Asp Arg Glu Lys Ser
 210 215

<210> 9753
 <211> 947
 <212> PRT
 <213> B.fragilis

<400> 9753

Tyr Asn Cys Ser Ser Ala Lys Thr Leu Gln Ile Ser Tyr Ile Gly Met
 1 5 10 15
 Gln Thr Val Glu Val Ala Ile Lys Pro Val Val Lys Ile Thr Leu Lys
 20 25 30
 Pro Asp Thr Glu Val Leu Asp Glu Val Val Val Thr Gly Tyr Gly Asn
 35 40 45
 Phe Lys Lys Ser Ser Phe Thr Gly Ala Ala Ser Ser Ile Thr Thr Glu
 50 55 60
 Lys Leu Gln Asp Val Pro Ser Leu Ser Val Gln Asp Lys Leu Ala Gly
 65 70 75 80
 Ser Val Ala Gly Val Gln Ile Thr Ser Thr Ser Gly Gln Pro Gly Ala
 85 90 95
 Val Glu Ser Val Arg Ile Arg Gly Met Gly Ser Ile Asn Ala Gly Asn
 100 105 110
 Asp Pro Leu Tyr Val Ile Asp Gly Val Pro Val Met Thr Gly Asp Ala
 115 120 125
 Ser Glu Phe Thr Tyr Ser Gln Ser Gly Asn Ser Leu Leu Ser Thr Ile

130	135	140
Asn Ser Asn Asp Ile Glu Ser Met Thr Val Ile Lys Asp Ala Ala Ala		
145	150	155
Ala Ser Leu Tyr Gly Ser Arg Ala Ala Asn Gly Val Ile Val Ile Thr		160
	165	170
Thr Lys Lys Gly Ala Ser Gly Lys Leu Lys Leu Asn Val Arg Ala Asp		175
	180	185
Trp Gly Phe Ser Asn Lys Ala Ile Asp Tyr Arg Pro Ile Leu Asn Gly		190
	195	200
Glu Asp Arg Arg Asp Ile Leu Tyr Met Gly Leu Lys Asn Tyr Ala Leu		205
	210	215
Asn Ser Gly Lys Asp Glu Thr Tyr Ala Val Asn Tyr Ala Asp Asn Asn		220
225	230	235
Ile Asp Lys Tyr Ala Ala Lys Pro Trp Ser Gly Tyr Thr Asp Trp Glu		240
	245	250
Asp Val Leu Phe Arg Asn Gly Ser His Gln Asn Tyr Glu Val Asn Ala		255
	260	265
Gln Gly Gly Asn Glu Arg Thr Lys Phe Tyr Thr Ser Phe Gly Tyr Thr		270
	275	280
Lys Gln Glu Gly Ile Thr Leu Gln Ser Gly Tyr Glu Arg Ile Thr Gly		285
	290	295
Arg Ala Asn Met Ser His Lys Ala Asp Arg Val Thr Ile Glu Ala Ser		300
305	310	315
Thr Met Phe Thr Asn Ser Thr Gln Asn Val Asn Ser Glu Gly Thr Ser		320
	325	330
Phe Ser Ser Pro Ile Met Cys Leu Ala Met Thr Ala Ser Pro Ser Thr		335
	340	345
Phe Pro Tyr Asn Glu Asp Gly Thr Phe Ser Thr Ser Phe Pro Ala Leu		350
	355	360
Asn Gly Ala Asn Pro Leu Gln Thr Ala Thr Tyr Asn Tyr Asp Arg Ser		365
	370	375
Thr Ile Val Arg Thr Leu Asn Thr Leu Ser Ala Thr Trp Asn Ile Trp		380
385	390	395
Asp Asn Leu Asn Ile Lys Glu Thr Leu Gly Tyr Asp Phe Asn Gln Thr		400
	405	410
Asn Asn Arg Val Trp Trp Asp Pro Arg Ser Asn Asp Gly Arg Ser Ser		415
	420	425
Lys Gly Val Phe Gln Arg Tyr Met Met Asn Arg Ser Lys Leu Asn Thr		430
	435	440
Gln Thr Gln Leu Thr Tyr Asn Lys Thr Phe Ala Glu His His Asn Ile		445
	450	455
Asp Val Leu Leu Gly Phe Glu Thr Glu Asp Tyr Lys Tyr Asp Tyr Thr		460
465	470	475
Tyr Thr Asn Gly Asn Thr Tyr Pro Ser Tyr Leu Pro Glu Ile Thr Asn		480
	485	490
Ala Gly Val Ser Arg Gly Ala Ser Asn Ile Asn Ser Tyr Arg Met Thr		495
	500	505
Ser Tyr Leu Gly Arg Leu Asn Tyr Asp Tyr Ala Gly Lys Tyr Tyr Val		510
	515	520
Ser Gly Ser Phe Arg Arg Asp Gly Ser Ser Arg Leu Ser Arg Asp Ser		525
	530	535
Arg Trp Gly Asn Phe Trp Ser Val Ser Gly Ser Trp Arg Leu Ser Gln		540
545	550	555
Glu Ala Phe Met Glu Ser Leu Ser Asn Val Ile Thr Asp Ala Lys Ile		560
	565	570
Arg Ala Ser Tyr Gly Val Asn Gly Thr Gln Pro Lys Asp Tyr Tyr Gly		575
	580	585
Tyr Met Gly Val Tyr Glu Phe Gly Tyr Asn Tyr Asn Gly Asn Gly Gly		590
	595	600
		605

130 135 140
 145 150 155
 160 165 170
 175 180 185
 190 195 200
 205 210 215
 220 225 230
 235 240 245
 250 255 260
 265 270 275
 280 285 290
 295 300 305
 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 400 405 410
 415 420 425
 430 435 440
 445 450 455
 460 465 470
 475 480 485
 490 495 500
 505 510 515
 520 525 530
 535 540 545
 550 555 560
 565 570 575
 580 585 590
 595 600 605

Ser Ser Glu Ala Arg Phe Tyr Asn Pro Ser Leu Lys Trp Glu Lys Asn
 610 615 620
 Tyr Ala Thr Asn Ile Gly Ile Asp Leu Thr Leu Phe Asn Arg Leu Thr
 625 630 635 640
 Val Ser Ala Glu Trp Tyr Asn Arg Glu Thr Lys Asp Leu Leu Met Asp
 645 650 655
 Lys Pro Ile Ser Ala Ala Val Gly Val Ile Asn Ser Ser Gly Val Ala
 660 665 670
 Asn Met Leu Val Asn Val Gly Ser Met Arg Asn Arg Gly Phe Glu Leu
 675 680 685
 Glu Leu Lys Ser Thr Asn Ile Gln Asn Lys Asp Leu Leu Trp Thr Thr
 690 695 700
 Ser Leu Asn Ile Gly His Asn Lys Asn Lys Leu Thr Lys Leu Asp Gly
 705 710 715 720
 Glu Gln Gln Glu Ile Ile Ser Gly Val Ser Ile His Arg Val Gly Gln
 725 730 735
 Pro Tyr Tyr Ser Ile Tyr Ala Tyr Glu Tyr Ala Gly Val Asp Pro Gln
 740 745 750
 Thr Gly Lys Glu Leu Tyr Tyr Ile Asn Gly Glu Asp Gly Ser Arg Glu
 755 760 765
 Thr Thr Thr Asn Ser Ala Ala Ala Asn Lys Thr Ile Ile Gly Ser Ile
 770 775 780
 Glu Pro Lys Val Gln Gly Gly Leu Thr Asn Tyr Val Ser Trp Lys Phe
 785 790 795 800
 Ile Asp Phe Asn Leu Thr Leu Thr Tyr Ser Leu Gly Gly His Ala Tyr
 805 810 815
 Asp Tyr Ala Thr Trp Leu Gln Ser Asn Gly Gly Thr Tyr His Tyr Leu
 820 825 830
 Gly Asn Val Pro Ala Tyr Tyr Lys Met Glu Asp Thr Trp Gln Lys Thr
 835 840 845
 Gly Asp Asn Ala Lys Leu Pro Gln Phe Ala Tyr Gly Asn Ala Asn Lys
 850 855 860
 Ala Ser Ser Arg Trp Leu Met Ser Thr Asp His Leu Arg Val Lys Asn
 865 870 875 880
 Met Thr Leu Gly Phe Thr Leu Pro Gln Ser Trp Ser Ser Lys Ala Gly
 885 890 895
 Ile Ser Lys Leu Arg Ala Tyr Val Ser Gly Asn Asn Leu Leu Thr Trp
 900 905 910
 Lys Lys Lys Ser Leu Tyr Val Asp Pro Glu Val Pro Val Asp Gly Leu
 915 920 925
 Cys Thr Phe Glu Thr Pro Ala Leu Arg Thr Val Thr Phe Gly Leu Glu
 930 935 940
 Ile Gly Phe
 945

<210> 9754

<211> 537

<212> PRT

<213> B.fragilis

<400> 9754

Ile Leu Lys Arg Thr Lys Met Lys Ser Ile Phe Asn Leu Ser Lys Gly
 1 5 10 15
 Ile Leu Ser Val Ala Leu Ile Ser Val Ala Phe Ala Ser Cys Ser Glu
 20 25 30
 Asp Thr Met Asp Asn Ile Asn Lys Asp Lys Asp His Thr Thr Ser Val
 35 40 45
 Pro Ala Lys Phe Ile Leu Ala Asp Val Ile Thr Ala Thr Ala Phe Ser
 50 55 60

Asn Ile Gly Gly Asp Phe Asn Thr Tyr Tyr Ser Thr Tyr Val Glu His
 65 70 75 80
 Met Val Gly Val Asp Asn Gln Leu Ala Asn Ala Glu Lys Arg Asn Gly
 85 90 95
 Glu Pro Ser Ala Ser Ser Thr Phe Asn Asn Val Trp Gly Asn Leu Tyr
 100 105 110
 Ser Thr Leu Lys Asn Ala Arg Ile Ala Ile Asn Ile Ser Ser Asn Glu
 115 120 125
 Val Thr Gly Asn Tyr Thr Thr Lys Gly Ile Gly Glu Val Leu Ala Ala
 130 135 140
 Ile Asn Ala Gly Leu Ile Ala Asp Ser Phe Gly Asp Thr Pro Phe Ser
 145 150 155 160
 Gln Ala Ala Leu Pro Glu Leu Ala Asn Gly Gln Pro Gln Phe Leu Thr
 165 170 175
 Pro Glu Leu Asp Lys Gln Glu Ala Ile Tyr Thr Ala Ile Met Glu Tyr
 180 185 190
 Leu Asp Ala Ala Ile Thr Asp Leu Pro Lys Gly Asp Lys Ser Asp Glu
 195 200 205
 Ile Gly Glu Tyr Asp Phe Ile Tyr Lys Gly Asp Gly Glu Ala Trp Leu
 210 215 220
 Lys Leu Ala Tyr Gly Leu Lys Ala Arg Tyr Thr Met Arg Leu Leu Ala
 225 230 235 240
 Arg Ser Ser Ser Lys Asp Ala Asp Leu Gln Lys Ile Leu Glu Tyr Val
 245 250 255
 Asp Lys Ser Tyr Thr Ser Ile Glu Glu Gln Ala Ala Phe Ser Ile Tyr
 260 265 270
 Ser Ala Thr Asn Leu Asn Pro Leu Phe Asp Phe Gln Trp Ser Arg Asp
 275 280 285
 Gly Leu Ala Ala Ser Lys Ser Tyr Ala Asp Lys Leu Ile Glu Arg Asn
 290 295 300
 Asp Pro Arg Leu Arg Arg Ile Phe Cys Ile Gly Gln Gly Lys Leu Thr
 305 310 315 320
 Glu Asn Glu Asn Ala Val Ser Ile Gln Val Thr Gly Ala Asp Asp Pro
 325 330 335
 Arg Phe Leu Met Ala Asp Asn Gly Thr Ala Glu Ser Val Lys Tyr Glu
 340 345 350
 Tyr Asn Thr Pro Ile Phe Val Tyr Ser Gln Thr Cys Pro Thr Leu Leu
 355 360 365
 Met Ser Tyr His Glu Leu Leu Phe Leu Lys Ala Glu Ala Leu Ala Arg
 370 375 380
 Leu Asn Arg Lys Asp Glu Ala Ala Asn Ala Leu Lys Asp Ala Val Val
 385 390 395 400
 Ala Ala Ile Ala Asn Ala Glu Thr Gly Val Ser Ala Ala Phe Asn Ala
 405 410 415
 Pro Thr Val Lys Ser Tyr Gly Gly Val Lys Glu Thr Thr Lys Ala Ile
 420 425 430
 Thr Ala Thr Glu Ala Glu Glu Tyr Phe Thr Asn Asn Val Lys Pro Leu
 435 440 445
 Phe Asp Ala Asn Pro Val Lys Glu Val Met Val Gln Lys Tyr Ile Ala
 450 455 460
 Phe Leu Gly Ala Phe Gly Glu Thr Thr Glu Cys Tyr Asn Asp Val Arg
 465 470 475 480
 Arg Leu Lys Ala Met Gly Glu Glu Tyr Ile Lys Leu Asp Asn Pro Tyr
 485 490 495
 Lys Phe Pro Leu Arg Ala Pro Tyr Gly Ala Asp Asp Val Ser Ala Asn
 500 505 510
 Pro Asn Val Glu Ala Ala Phe Gly Asn Gly Gln Tyr Val Tyr Thr Asp
 515 520 525
 Pro Val Trp Trp Ala Arg Gly Ser Arg

530

535

<210> 9755
 <211> 239
 <212> PRT
 <213> B.fragilis

<400> 9755

Ser Phe Ser Gly Asn Ile Leu Tyr Asn Glu Tyr Leu Lys Arg Asp Met
 1 5 10 15
 Gly Lys Leu Tyr Val Val Pro Thr Pro Val Gly Asn Leu Glu Asp Met
 20 25 30
 Thr Phe Arg Ala Ile Lys Val Leu Lys Glu Ala Asp Leu Ile Leu Ala
 35 40 45
 Glu Asp Thr Arg Thr Ser Gly Ile Leu Leu Lys His Phe Glu Ile Lys
 50 55 60
 Asn Val Met Gln Ser His His Lys Phe Asn Glu His Lys Thr Val Glu
 65 70 75 80
 Ser Val Val Asn Arg Ile Lys Ala Gly Glu Thr Ile Ala Leu Ile Ser
 85 90 95
 Asp Ala Gly Thr Pro Gly Ile Ser Asp Pro Gly Phe Leu Val Val Arg
 100 105 110
 Glu Cys Val Arg Asn Gly Ile Glu Val Gln Cys Leu Pro Gly Ala Thr
 115 120 125
 Ala Phe Val Pro Ala Leu Val Ala Ser Gly Leu Pro Asn Glu Lys Phe
 130 135 140
 Cys Phe Glu Gly Phe Leu Pro Gln Lys Lys Gly Arg Met Thr Lys Leu
 145 150 155 160
 Lys Ser Leu Val Asp Glu His Arg Thr Met Val Phe Tyr Glu Ser Pro
 165 170 175
 His Arg Leu Leu Lys Thr Leu Thr Gln Phe Ala Glu Tyr Phe Gly Pro
 180 185 190
 Glu Arg Gln Val Ser Val Ser Arg Glu Ile Ser Lys Ile His Glu Glu
 195 200 205
 Thr Val Arg Gly Thr Leu Ser Glu Leu Ile Glu His Phe Thr Ala Thr
 210 215 220
 Asp Pro Arg Gly Glu Ile Val Ile Val Leu Ala Gly Ile Asp Asp
 225 230 235

<210> 9756
 <211> 507
 <212> PRT
 <213> B.fragilis

<400> 9756

Lys Gln Phe Met Lys Lys Glu Phe Met Lys Lys Ile Tyr Lys Ser Ile
 1 5 10 15
 Thr Leu Val Ala Ala Ile Leu Ser Leu Ser Ser Cys Gly Asn Asp Trp
 20 25 30
 Leu Asp Arg Lys Pro Ala Asp Gly Ile Pro Ser Glu Asp Ala Ile Thr
 35 40 45
 Asn Tyr Asn Asp Ala Leu Thr Ala Arg Thr Gly Met Tyr Asp Gly Ile
 50 55 60
 Gln Gly Asn Ser Asn Ala Thr Ser Tyr Tyr Gly Ala Arg Met Phe Tyr
 65 70 75 80
 Tyr Gly Asp Val Arg Ala Asp Asp Met Gln Ala Arg Thr Gln Gly Met
 85 90 95
 Arg Ser Ser Ser Cys Tyr Glu Met Leu Tyr Thr Val Asp Asp Ala Pro
 100 105 110

Asn Met Trp Asn Ile Pro Tyr Asn Val Ile Arg Arg Ala Asn Arg Leu
 115 120 125
 Ile Glu Ala Ile Asn Glu Lys Lys Val Thr Asp Ala Thr Glu Ala Gln
 130 135 140
 Ile Gly Lys Ile Tyr Ser Glu Ala Leu Val Val Arg Ala Leu Val His
 145 150 155 160
 Phe Asp Leu Val Arg Ile Tyr Gly Met Pro Tyr Thr Ala Asp Asn Gly
 165 170 175
 Ala Ser Leu Gly Val Pro Val Ile Val Lys Pro Leu Glu Arg Asn Asp
 180 185 190
 Leu Pro Ser Arg Asn Thr Val Ala Glu Val Tyr Thr Gln Val Ile Thr
 195 200 205
 Asp Leu Thr Asp Ala Ile Asn Ser Gly Tyr Leu Ala Lys Asp Gln Thr
 210 215 220
 Pro Gly Tyr Ile Asn Glu Trp Ala Ala Lys Ala Leu Leu Thr Arg Val
 225 230 235 240
 Tyr Leu Thr Lys Gly Asp Asn Glu Asn Ala Leu Lys Val Ala Glu Asp
 245 250 255
 Ile Ile Thr Asn Ser Pro Tyr Lys Leu Trp Thr Asn Glu Glu Tyr Val
 260 265 270
 Asn Ala Trp Tyr Lys Ser Asn Gly Ala His Thr Asn Glu Met Ile Phe
 275 280 285
 Glu Val Val Asn Ala Ser Asn Asp Asp Trp Thr Asp Arg Asn Gly Ile
 290 295 300
 Ala Tyr Leu Leu Asn Glu Asn Gly Tyr Ala Asp Ala Ile Val Thr Lys
 305 310 315 320
 Ser Phe Met Asn Met Leu Ser Gln Asp Pro Lys Asp Val Arg Ile Gly
 325 330 335
 Met Val Leu Pro Ala Gln Tyr Asp Lys Asp Leu Gln Glu Glu Tyr Gly
 340 345 350
 Asp Ala Lys Ile Phe Ile Asn Lys Phe Pro Ala Asp Lys Asp Asp Val
 355 360 365
 Gly Glu Met Arg Leu Asn Asn Leu Pro Leu Leu Arg Leu Ser Glu Val
 370 375 380
 Tyr Leu Ser Ala Ala Glu Ala Ala Lys Leu Gly Gly His Gln Asp
 385 390 395 400
 Lys Ala Ala Lys Tyr Leu Asn Glu Ile Val Gln Arg Ala Asn Pro Glu
 405 410 415
 Ala Lys Ala Ile Ser Glu Ala Asp Ala Thr Val Glu Arg Ile Ile Leu
 420 425 430
 Glu Arg Arg Lys Glu Met Ile Gly Glu Gly Gln Arg Tyr Phe Asp Ala
 435 440 445
 Leu Arg Asn Asn Glu Thr Ile Val Arg Tyr Lys Asp Glu Gly Asp Lys
 450 455 460
 Gly Tyr His Tyr Ser Leu Ile Lys Glu Ser Gln Ser Phe Asp Arg Thr
 465 470 475 480
 Tyr Phe Arg Ala Ile Leu Pro Ile Pro Val Asp Glu Thr Asn Val Asn
 485 490 495
 Pro Asn Leu Arg Ala Gln Gln Asn Pro Gly Tyr
 500 505

<210> 9757

<211> 418

<212> PRT

<213> B.fragilis

<400> 9757

Asn Lys Ile Ile Tyr Phe Lys Asn Pro Lys Thr Met Lys Ile Arg Asn
 1 5 10 15

Leu Met Leu Ala Leu Ala Gly Thr Ala Leu Val Phe Ser Ala Cys Glu
 20 25 30
 Lys Asp Pro Asn Pro Lys Val Pro Thr Thr Asp Ala Asn Ile Ala Leu
 35 40 45
 Ala Thr Ile Leu Pro Asn Pro Asp Gly Met Thr Gly Ala Ala Tyr Leu
 50 55 60
 Gln Leu Ile Arg Asp Glu Phe Pro Gln Asn Thr Asn Asn Asn Asn Gly
 65 70 75 80
 Ile Pro Ile Pro Tyr Gly Gly Ser Tyr Pro Ile Ile Glu Gly Asn Asp
 85 90 95
 Ile Phe Val Phe Pro Gly Tyr Met Gly Asp Ser Lys Asn Glu Leu Val
 100 105 110
 Lys Tyr Thr Arg Asn Asn Gly Gln Leu Ser Arg Thr Gly Thr Met Lys
 115 120 125
 Leu Pro Pro Asn Ser Ser Ala Thr Asn Ile Val Phe Ala Ser Thr Gly
 130 135 140
 Lys Ala Tyr Leu Ser Met Ala Gly Leu Gly Lys Ile Ala Ile Phe Asp
 145 150 155 160
 Pro Thr Thr Met Thr Gln Gln Gly Glu Ile Asp Leu Thr Ser Leu Gly
 165 170 175
 Val Ser Asp Ser Asn Pro Asp Pro Ser Ala Met Leu Leu Arg Asp Gly
 180 185 190
 Leu Leu Phe Val Gly Leu Ser Gln Met Val Gly Gly Trp Ile Pro Pro
 195 200 205
 Gln Asp Arg Pro Tyr Ser Asp Ile Ala Ile Ile Asp Thr Gln Thr Asp
 210 215 220
 Lys Leu Leu Lys Met Ile Thr Asp Lys Thr Ser Gly Ile Ser Met Pro
 225 230 235 240
 Thr Arg Pro Ile Asp Arg Tyr Ser Ile Phe Met Asp Glu Lys Lys Asp
 245 250 255
 Ile Tyr Ile Ser Cys Met Gly Gly Phe Gly Met Val Lys Gly His Asn
 260 265 270
 Ala Gly Val Leu Arg Ile Lys Ala Gly Glu Thr Glu Phe Asp Pro Thr
 275 280 285
 Tyr Gln Trp Thr Ile Thr Gly Ala Ala Ile Ser Gly Glu Glu Lys Thr
 290 295 300
 Ala Gly Phe Ile Ser Ala Ile Arg Tyr Val Gly Asn Gly Lys Ala Tyr
 305 310 315 320
 Ala Tyr Ile Asn Met Pro Gly Tyr Tyr Lys Pro Gly Glu Gln Gly His
 325 330 335
 Thr Ala Ile Ala Asp Leu Ala Val Glu Ile Asp Leu Tyr Asn Lys Thr
 340 345 350
 Met Lys Lys Val Gln Gly Leu Asp Leu Ser Asn Gly Phe Gly Val Met
 355 360 365
 Leu Ser Leu Tyr Lys Gly Ser Met Leu Ile Gly Asn Ser Ser Ala Lys
 370 375 380
 Ala Lys Gly Ile Tyr Ser Leu Asp Ile Gln Thr Gly Glu Val Ser Lys
 385 390 395 400
 Glu Pro Ile Leu Thr Thr Val Gly Asn Pro Ile Leu Cys Tyr Tyr Phe
 405 410 415
 Glu Lys

<210> 9758

<211> 394

<212> PRT

<213> B.fragilis

<400> 9758

Ser Gln Val Ile Pro Met Arg Ser His Ile Lys Tyr Gln Val Ile Met
 1 5 10 15
 Glu Arg Lys Lys Ile Thr Phe Asp Ser Phe Ile Arg Gly Ser Ile Cys
 20 25 30
 Cys Ala Leu Ile Val Gly Leu Leu Ile Leu Phe Lys Arg Leu Ser Gly
 35 40 45
 Val Leu Leu Pro Phe Phe Val Ala Trp Leu Ile Ala Tyr Met Ile Tyr
 50 55 60
 Pro Leu Val Lys Phe Phe Gln Tyr Lys Leu Arg Phe Lys Ser Arg Ile
 65 70 75 80
 Ile Ser Ile Phe Cys Ala Leu Phe Ser Ile Thr Ile Val Gly Ile Ser
 85 90 95
 Leu Phe Tyr Leu Leu Val Pro Pro Met Leu Ala Glu Met Gly Arg Met
 100 105 110
 Asn Asp Leu Leu Val Thr Tyr Leu Thr Asn Gly Thr Tyr Ser Ser Gly
 115 120 125
 Thr Val Pro Pro Thr Leu Ser Glu Phe Ile His Lys His Ile Asp Leu
 130 135 140
 Gln Ala Leu Asn Arg Ile Leu Ser Glu Glu Asn Ile Met Asn Thr Ile
 145 150 155 160
 Lys Glu Thr Val Pro Lys Leu Trp Ala Leu Val Ala Glu Ser Ile Asn
 165 170 175
 Ile Leu Phe Ser Val Phe Ala Ser Phe Ile Ile Leu Leu Tyr Val Val
 180 185 190
 Phe Ile Leu Leu Asp Tyr Glu Ser Ile Ala Glu Gly Trp Leu His Leu
 195 200 205
 Leu Pro Gly Lys Tyr Arg Thr Phe Ala Ser Asn Leu Val Asn Asp Ile
 210 215 220
 Gln Asp Gly Met Asn Arg Tyr Phe Arg Gly Gln Ala Phe Val Ala Phe
 225 230 235 240
 Cys Val Gly Ile Leu Phe Ser Ile Gly Phe Leu Ile Ile Asp Phe Pro
 245 250 255
 Met Ala Ile Ala Leu Gly Leu Phe Ile Gly Ala Leu Asn Met Val Pro
 260 265 270
 Tyr Leu Gln Ile Ile Gly Phe Leu Pro Thr Ile Val Leu Ala Ile Leu
 275 280 285
 Lys Ala Ala Asp Thr Gly Glu Asn Phe Trp Val Ile Leu Ala Gly Ala
 290 295 300
 Leu Ile Val Phe Ile Val Val Gln Ala Ile Gln Asp Gly Phe Leu Val
 305 310 315 320
 Pro Arg Ile Met Gly Lys Ile Thr Gly Leu Asn Pro Ala Ile Ile Leu
 325 330 335
 Leu Ser Leu Ser Ile Trp Gly Ser Leu Leu Gly Met Leu Gly Met Ile
 340 345 350
 Ile Ala Leu Pro Leu Thr Thr Leu Met Leu Ser Tyr Tyr Gln Arg Phe
 355 360 365
 Ile Ile Asn Lys Glu Lys Ile Lys Tyr Asp Arg His Glu Val Thr Asp
 370 375 380
 Asn Gln Ser Ala Glu Glu Asn Thr Lys Lys
 385 390

<210> 9759

<211> 195

<212> PRT

<213> B.fragilis

<400> 9759

Val Gly Val Met Gly Asn Phe Val Lys Arg Gly Leu Lys Asp Lys Leu
 1 5 10 15

Asp Asn Ser Phe Leu Val Ser Gly Val Leu Pro Lys Gly Val Lys Lys
 20 25 30
 Ile Ile Pro Phe Ser Lys Thr Arg Gly His Ala Gln Gly Ser Arg Pro
 35 40 45
 Met Glu Asp Leu Ser Glu Val Lys Gln Ala Gly Phe Gly Arg Arg Gln
 50 55 60
 Thr Gly Ile Gln Pro Ile Glu Glu Trp Phe Val Lys Ser Val Gly Thr
 65 70 75 80
 Asp Glu Pro Arg Leu Met Pro Ala Val Phe Ala Glu Asp Ala Gly Trp
 85 90 95
 Glu Lys Ile Leu Leu Asp Gln Gln Thr Ile Asp Asn Leu Ala Thr Leu
 100 105 110
 Gln Ile Ala Gly Leu Glu Lys Pro Lys Trp Pro Ala Ala Trp Ile Leu
 115 120 125
 Gln Glu Lys Ala Gly Cys Ala Val Tyr Arg Thr Cys Ile Arg Trp Thr
 130 135 140
 Pro Glu Met Ile Arg Glu Gly Met Thr Val Leu Glu Phe Gly Cys Ile
 145 150 155 160
 Asp Asp Ala Gly Thr Leu Trp Val Asn Gly Val Glu Val Gly Thr His
 165 170 175
 Glu Glu Trp Asp Lys Pro Tyr Val Ile Asn Val Ala Pro Val His Ser
 180 185 190
 Arg Gly Arg
 195

<210> 9760

<211> 543

<212> PRT

<213> B.fragilis

<400> 9760

Gly Gly Ser Leu Tyr Arg Gly Cys Arg Met Tyr Gly Thr Ile Arg Ala
 1 5 10 15
 Val Met Lys Lys Tyr Leu Tyr Val Leu Ile Ala Trp Met Leu Pro Leu
 20 25 30
 Cys Ser Ile His Ala Gln Ala Pro Val Trp Asn Pro Asp Asn Gly Asn
 35 40 45
 Gly Thr Phe Thr Asn Pro Ile Met Trp Gly Asp Trp Pro Asp Pro Asp
 50 55 60
 Val Ile Arg Val Gly Asp Phe Tyr Phe Val Ser Thr Ser Met His
 65 70 75 80
 Tyr Val Pro Gly Cys Pro Ile Ala Thr Ser Lys Asp Leu Val Asn Trp
 85 90 95
 Lys Met Ala Gly Tyr Ala Val Asp Arg Tyr Asp Glu Asp Ala Arg Tyr
 100 105 110
 Asp Leu Lys Gly Gly Asp Arg Tyr Leu Arg Gly Ser Trp Ala Ala Thr
 115 120 125
 Ile Arg His His Asn Gly Lys Phe Tyr Val Gly Phe Cys Thr Pro Ser
 130 135 140
 Trp Glu Gly Glu Gly Pro Gly His Phe Ser Ile Cys Ile Ala Asp Asp
 145 150 155 160
 Val Lys Gly Pro Trp Glu Arg Thr Ile Phe Pro Glu Tyr Leu Tyr Asp
 165 170 175
 Pro Gly Leu Leu Phe Asp Asp Asp Gly Lys Val Tyr Val Phe His Gly
 180 185 190
 Gln Gly Thr Leu Tyr Val Thr Glu Leu Ala Ser Asp Ala Lys Ser Val
 195 200 205
 Lys Gly Glu Lys Val Lys Ile Trp Asp Lys Arg Phe Lys Asn Ala His
 210 215 220

Glu Phe Gly Gly Gly Tyr Gly Met Glu Gly Ala His Ala Tyr Lys Ile
 225 230 235 240
 Asn Gly Lys Tyr Tyr Leu Thr Cys Pro Ala Gly Gly Thr Glu Gly Trp
 245 250 255
 Gln Ile Cys Leu Arg Ser Asp Asn Ile Tyr Gly Pro Tyr Glu His Lys
 260 265 270
 Leu Ile Met Asn Asp Ser Gly Ser Tyr Pro Pro Asn Gly Leu His Gln
 275 280 285
 Gly Gly Met Val Gln Leu Lys Asn Gly Asp Trp Trp Phe Ile Ile Met
 290 295 300
 Gln Asp Arg Gly Pro Ile Gly Arg Val Pro His Leu Val Pro Val Lys
 305 310 315 320
 Trp Val Asp Gly Trp Pro Met Leu Gly Ser Gly Gly Lys Asp Ile Ile
 325 330 335
 Thr Tyr Pro Lys Pro Glu Val Gly Lys Thr Tyr Pro Phe Ala Ser Pro
 340 345 350
 Ala Thr Thr Asp Glu Phe Asn Thr Ser Ser Leu Gly Leu Gln Trp Gln
 355 360 365
 Trp Asn His Asn Pro Asp Asn Ser Arg Trp Ser Leu Lys Glu Arg Lys
 370 375 380
 Gly His Met Arg Leu Lys Ala Ser Tyr Ala Glu Ser Leu Lys Thr Ala
 385 390 395 400
 Arg Asn Thr Leu Thr Gln Arg Val Gln Gly Pro Ser Ser Glu Ala Thr
 405 410 415
 Val Glu Leu Asp Val Ser Gly Leu Lys Asp Gly Asn Val Ala Gly Phe
 420 425 430
 Gly Val Phe Glu Phe Pro Tyr Ala Tyr Val Ala Val Glu Gln Thr Asn
 435 440 445
 Gly Glu Lys Lys Ile Val Met Cys Asn Asp Gly Gln Thr Ile Glu Thr
 450 455 460
 Ile Asp Arg Phe Glu Gly Asn Lys Ile Trp Ile Arg Ala Arg Val Met
 465 470 475 480
 Asp Val Gly Phe Arg Ala Val Phe Tyr Tyr Ser Thr Asp Gly Lys Tyr
 485 490 495
 Phe Leu Pro Ile Gly Asn Glu Leu Ser Met Gly Leu Gly Leu Val Trp
 500 505 510
 Thr Ala Asn Arg Phe Ala Leu Phe Asn Phe Ser Lys Glu Lys Ala Gly
 515 520 525
 Glu Asp Gly Tyr Thr Asp Phe Asn Trp Phe Arg Phe Thr Asn Lys
 530 535 540

<210> 9761

<211> 339

<212> PRT

<213> B.fragilis

<400> 9761

Leu Lys Gly Ile Met Met Val Thr Arg Leu Met Lys His Asp Leu Cys
 1 5 10 15
 Glu Met Val Leu Glu Trp Pro Met Pro Asn Ile Val Lys Gly Lys Arg
 20 25 30
 Thr Glu Lys Asn Asn Tyr Arg Ile Asp Asn Thr Tyr Leu Lys Ala Thr
 35 40 45
 Phe Glu Glu Ile Ser Thr Pro Leu Phe Ser Ile Met Asp Gln His Ile
 50 55 60
 Ser Ser Glu Glu Pro Ile Lys Ile Tyr Thr Arg Ala Asp Asp Tyr His
 65 70 75 80
 Ala Val Trp Phe Cys Ala Thr Phe Ala Gly His Ala Thr Cys Cys Tyr
 85 90 95

Asn Ser Val Ile Arg Ser Glu Glu Trp Asn Lys Gly Asp Ala Asn Leu
 100 105 110
 Leu Lys Cys Asp Gly Val Asp Ser Cys Val His Phe Pro Lys Asn Thr
 115 120 125
 Pro Phe His Met Met Glu Ile Met Leu Ser His Asp Tyr Leu Arg Glu
 130 135 140
 Leu Ala Ile His Tyr Pro Asp Leu Leu Gly Gly Lys Asp Phe Glu Thr
 145 150 155 160
 Val Leu Cys Asp Gly Gln Tyr Arg Ala Tyr Arg Lys Asn Arg Pro Phe
 165 170 175
 Gly Pro Gly Val Tyr Lys Ala Leu His Asp Ile Arg Phe Ser Gln Leu
 180 185 190
 Asn Gly Asn Met Ala Ser Met Tyr Ala Asp Ala Lys Ile Arg Glu Ile
 195 200 205
 Leu Ser Leu Phe Leu Ala Gly Gln Glu Glu Glu Asn Tyr Leu His Cys
 210 215 220
 Ser Cys Thr Ile Gly Ile Thr Cys Asp Lys Ile His His Ala Arg Ala
 225 230 235 240
 Ile Ile Glu Gln Glu Tyr Leu Asn Pro Pro Ser Leu His Gln Leu Ala
 245 250 255
 Leu Arg Val Gly Thr Asn Glu Cys Thr Leu Lys Arg Gly Phe Lys Thr
 260 265 270
 Val Phe Gly Thr Thr Val Phe Gly His Ile Phe Glu Tyr Arg Met Lys
 275 280 285
 Met Ala Cys Arg Tyr Leu Leu Asp Ser Ser Lys Thr Ile Gln Glu Ile
 290 295 300
 Gly Ala Cys Val Gly Tyr Glu Tyr His Ala His Phe Ser Thr Ala Phe
 305 310 315 320
 Lys Arg Lys Phe Gly Leu Thr Pro Leu Glu Tyr Arg Cys Ser Arg Leu
 325 330 335
 Ser Gly Ser

<210> 9762
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 9762
 Ser Glu Pro Val Thr Glu Leu Lys Val Ser Lys Ser Val Asp Asp Glu
 1 5 10 15
 Ile Gly Ile Pro Ser Thr Thr Tyr Asn Gly Val Leu Ser Pro Val Asn
 20 25 30
 Glu Arg Glu Pro Arg Ile Val Ile Leu Glu Glu Ala Pro Gly Ile Pro
 35 40 45
 Asp Asp Gly Asp Ile Ser Thr Pro Glu Thr Leu Pro Cys Lys Ala Leu
 50 55 60
 Glu Arg Leu Leu Leu Glu Ala
 65 70

<210> 9763
 <211> 242
 <212> PRT
 <213> B.fragilis

<400> 9763
 Phe Glu Arg Val Asp Gly Thr Ile Val Thr Phe Ile Asp Ile Leu Tyr
 1 5 10 15
 Phe Cys Val Gln Tyr Arg Thr His Lys Asn Thr Thr Met Asp Thr Leu

20 25 30
 Leu Pro Phe Ala Leu Leu Cys Phe Thr Ser Phe Phe Thr Leu Thr Asn
 35 40 45
 Pro Leu Gly Thr Met Pro Val Phe Leu Thr Met Thr His Gly Met Thr
 50 55 60
 Asp Lys Glu Arg Gln Ala Val Val Arg Arg Ala Thr Phe Val Ser Phe
 65 70 75 80
 Ile Thr Leu Met Val Phe Val Phe Ala Gly Gln Phe Leu Phe Lys Phe
 85 90 95
 Phe Gly Ile Ser Thr Asn Gly Phe Arg Ile Ala Gly Gly Val Ile Ile
 100 105 110
 Phe Lys Ile Gly Phe Asp Met Leu Gln Ala Arg Tyr Thr Pro Met Lys
 115 120 125
 Leu Lys Asp Glu Glu Ile Lys Thr Tyr Ala Asp Asp Ile Ser Ile Thr
 130 135 140
 Pro Leu Ala Ile Pro Met Leu Cys Gly Pro Gly Ala Ile Ala Asn Ala
 145 150 155 160
 Ile Val Leu Met Glu Asp Ala His Thr Ile Glu Met Lys Gly Thr Leu
 165 170 175
 Ile Gly Ile Ile Ala Leu Ile Tyr Phe Ile Thr Phe Leu Ile Leu Arg
 180 185 190
 Ala Ser Thr Arg Leu Val Lys Val Leu Gly Glu Thr Gly Asn Asn Val
 195 200 205
 Met Met Arg Leu Met Gly Leu Ile Leu Met Val Ile Ala Val Glu Cys
 210 215 220
 Phe Val Ser Gly Leu His Pro Ile Leu Val Gly Ile Leu Lys Glu Gly
 225 230 235 240
 Leu Leu

<210> 9764
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 9764

Cys Asn Thr Leu Phe Ile Cys Ser Ile Leu Pro Pro Asn Asn Ser Arg
 1 5 10 15
 Glu Lys Arg Asn Glu Ser Phe Lys Leu Ile Glu Arg Arg Lys Ser Pro
 20 25 30
 Ala Val Leu Ile Arg Ser Ala Lys Met Gly Glu Glu Ala Thr Leu Val
 35 40 45
 Ser Thr Phe Thr Val Gly Ser Ser Asp Cys Gly Thr Asp Thr Asp Ser
 50 55 60
 Asn Thr Ser Ser Phe Ser Ser Ala Thr Gly Ser Ser Ser Thr Val Gly
 65 70 75 80
 Ser Cys Ser Ile Thr Ala Ser Asp Lys Leu Asn Gly Pro Gly Ser Thr
 85 90 95
 Ala Ser Trp Glu Ser Ser Ala Thr Ala Ala Ser Ser Phe Phe Ser Gly
 100 105 110
 Met Ser Ala Thr Val Ser Phe Lys Ala Gly Ile Ser Thr Thr Ser Ile
 115 120 125
 Val Ser Val Thr Gly Leu Phe Ser Gly Leu Ser Glu Ala Ser Ala Ala
 130 135 140
 Ile Thr Gly Phe Ala Ser Asn Ser Ser Asn Asn Ala Ser Asn Arg Pro
 145 150 155 160
 Arg Ile Cys Thr Ile Phe Leu Arg Ala Thr Pro Arg Lys Thr Glu Ser
 165 170 175
 Gly Ser Arg Glu Met Ile Ser Ile Arg Tyr Leu Ser Ser

180

185

<210> 9765
 <211> 253
 <212> PRT
 <213> B.fragilis

<400> 9765

Asp Leu Ala Phe Asn Phe Ser Lys Ile Asp Asn Tyr Val Asp Lys Leu
 1 5 10 15
 Ala Pro Gly Val Ser Ser Ile Met Leu Gly Gly Phe Val Asp Pro Gln
 20 25 30
 Val Arg Leu Ser Ala Gly Asp Lys Phe Pro Val Ile Tyr Gly Thr Ser
 35 40 45
 Tyr Gln Arg Asn Glu Glu Gly Gln Ile Val Val Asp Glu Asn Gly Met
 50 55 60
 Pro Thr Leu Gly Glu Asn Arg Val Leu Gly Asn Val Ser Pro Asp Phe
 65 70 75 80
 Arg Met Gly Phe Asn Thr Thr Phe Glu Phe Tyr Lys Phe Arg Leu Ser
 85 90 95
 Ala Val Leu Asp Trp Lys Gln Gly Gly Cys Met Tyr Ala Gly Ser Val
 100 105 110
 Ser Thr Leu Asp Tyr Tyr Gly Val Thr Gln Lys Ser Ala Asn Tyr Arg
 115 120 125
 Lys Ala Asp His Phe Tyr Phe Glu Lys Pro Ala Val Lys Gln Leu Ala
 130 135 140
 Asp Gly Ser Tyr Ala Pro Asn Asp Ile Lys Ile Ser Gly Glu Asn Ala
 145 150 155 160
 Tyr Asn Tyr Phe Asp Arg Leu Ser Thr Ile Ser Glu Ala Gly Val Tyr
 165 170 175
 Gly Ser Ser Phe Leu Lys Leu Arg Glu Ile Ala Leu Ser Tyr Pro Val
 180 185 190
 Leu Asn Lys Ser Tyr Leu Gly Val Thr Val Asn Val Phe Ala Arg Asn
 195 200 205
 Leu Leu Leu Trp Ser Glu Met Asp Asn Gly Ile Asp Pro Glu Ser Ser
 210 215 220
 Gln Gly Asn Asn Asn Met Ala Gly Ala Phe Glu Arg Phe Ser Leu Pro
 225 230 235 240
 Gly Thr Ser Ser Tyr Gly Phe Gly Ile Thr Val Lys Phe
 245 250

<210> 9766
 <211> 1360
 <212> PRT
 <213> B.fragilis

<400> 9766

Cys Ile Ile Ser Asn Met Lys Tyr Ile Tyr Arg Thr Tyr Leu Ser Leu
 1 5 10 15
 Leu Tyr Phe Leu Cys Leu Leu Phe Cys Leu Pro Leu Lys Val His Ala
 20 25 30
 Tyr Ser Leu Arg Gln Phe Ser Asn Arg Asp Gly Leu Ser Asn Ser Ala
 35 40 45
 Ile Leu Ser Leu Tyr Gln Asp Asp Arg Gly Ile Ile Trp Ile Gly Ser
 50 55 60
 Cys Asp Gly Met Asn Ile Phe Asp Gly Thr Asp Ile His Leu Tyr Thr
 65 70 75 80
 Pro Ile Asn Ser Ser Lys Thr Leu Leu Ser Gly Asn Leu Ile Asn Gln
 85 90 95

Ile Ile Glu Ser Glu Lys Asp Ile Leu Trp Val Gln Thr Asn Tyr Gly
 100 105 110
 Leu Asn Arg Leu Asp Thr Lys Gln Gln Thr Ser Gln Ser Phe Thr Glu
 115 120 125
 Phe Lys Gly Gln Tyr Phe Met Ala Asn Asn Lys Asp Asp Met Leu Phe
 130 135 140
 Ile Leu Lys Asp Asp Gly Tyr Leu Tyr Tyr Tyr Gln Arg Glu Ala Gln
 145 150 155 160
 Ser Phe Asn Arg Leu Glu Ile Pro Asn Leu Glu Phe Ser His Val Leu
 165 170 175
 Ser Met Thr Val Asp Ser Asn Asp Ile Leu Trp Ile Phe Thr Ser Asn
 180 185 190
 Glu Glu Thr Gln Ser Tyr Arg Ile Glu Asn Thr Lys Gln Gly Leu Thr
 195 200 205
 Leu Thr Arg Lys Asn Leu Phe Thr His Ser Cys Lys Leu Tyr His Ala
 210 215 220
 Phe Ala Glu Lys Asp Met Ala Tyr Phe Ile Asp Glu Thr Tyr Ala Leu
 225 230 235 240
 Tyr Glu Tyr Asp Phe Asn Asn Arg Gln Ala Tyr Tyr Ile Ala Asp Leu
 245 250 255
 Arg Gly Gln Ile Glu Val His Gly Glu Val Ser Ser Ile Ile Lys Gln
 260 265 270
 Lys Asn Asp Tyr Tyr Ile Gly Phe Lys Asn Ser Gly Leu Ile Val Leu
 275 280 285
 Lys Tyr Met Ser Ser Gln Lys Met Lys Tyr Gln Ile Gln Lys Thr Glu
 290 295 300
 Ile His Ser Gly Ile Phe Cys Leu Met Lys Asp Lys Phe Gln Asp Ile
 305 310 315 320
 Val Trp Ile Gly Thr Asp Gly Gln Gly Val Tyr Met Tyr Tyr Asn Asp
 325 330 335
 Thr Phe Ser Ile Thr Asn Thr Leu Leu Asp Thr Pro Val Tyr Gln Ile
 340 345 350
 Ser Asn Pro Val Arg Ala Leu Tyr Tyr Asp Gln Glu Gln Thr Leu Trp
 355 360 365
 Ile Gly Thr Lys Gly Ser Gly Ile Leu Arg Ile Lys Lys Tyr Thr Pro
 370 375 380
 Asp Asn Ser Met Pro Met Ser Ser Asp Arg Ile Thr Pro Tyr Asn Ser
 385 390 395 400
 Ala Leu Ala Asp Asn Ser Val Tyr Cys Phe Ala Pro Gly Tyr Lys Asp
 405 410 415
 Lys Leu Trp Ile Gly Thr Glu Asn Gly Ile Asn Tyr Tyr Ser Tyr Leu
 420 425 430
 Ser Arg Gln Leu Lys Glu Leu Pro Ile Ile Ala Asn Gly Glu Lys Val
 435 440 445
 Lys Tyr Val His Ser Ile Lys Gln Pro Asn Asp Thr Thr Leu Trp Val
 450 455 460
 Ser Thr Val Gly Glu Gly Ile Val Lys Val Ile Phe Asp Ala Ser Thr
 465 470 475 480
 Ala Thr Pro Thr Val Lys Ser Ala Ser Arg Thr Val Ile Asp Asn Gly
 485 490 495
 Arg Met Ala Ser Asn Tyr Phe Phe Thr Ser Tyr Gln Glu Asn Asp Ser
 500 505 510
 Ile Leu Trp Phe Gly Asn Arg Gly Cys Gly Ala Tyr Arg Met Asn Val
 515 520 525
 Glu Thr Gly Glu Met Ile Pro His Arg Phe Asp Ser Ile Val Ser Ser
 530 535 540
 Gln Thr Ala Asn Asp Ile Phe Ala Ile Tyr Lys Asn Ala Lys Gly Tyr
 545 550 555 560
 Trp Leu Gly Thr Ser Ser Gly Leu Leu His Leu Glu Gln Asp Asp Ser

565 570 575
 Leu Cys Thr Lys Ala Asp Leu Phe Leu Asn Asn Thr Val His Gly Val
 580 585 590
 Leu Glu Asp His Gln Gly Asp Leu Trp Leu Ser Thr Asn Gln Gly Leu
 595 600 605
 Ile Arg Phe Asn Pro Glu Thr Arg Thr Gly Gln Thr Tyr Asn Ser Gly
 610 615 620
 Asn Gly Leu Glu Ile Thr Glu Phe Ser Asp Gly Ala Phe Tyr Lys Asp
 625 630 635 640
 Val Val Ser Glu Thr Leu Phe Phe Gly Gly Thr Asn Gly Phe Ile Ser
 645 650 655
 Ile Gln Thr Asn Asp Cys Ile Thr Glu Glu Tyr Met Pro Gln Ile Thr
 660 665 670
 Leu Lys Gly Leu Ser Ile Phe Gly Lys Glu His Asn Ile His Lys Phe
 675 680 685
 Leu Tyr Glu Lys Glu Gly Lys Thr Ile Leu Gln Leu Asp Tyr Ser Gln
 690 695 700
 Asn Phe Phe Gln Leu Asn Phe Met Ala Ile Asp Tyr Ile Asn Gly Asn
 705 710 715 720
 Asn Tyr Ser Phe Tyr Tyr Lys Leu Glu Glu Met Ser Asn Gln Trp Ile
 725 730 735
 Glu Asn Gly Thr Ser Thr Ser Ala Ile Phe Ser Asn Leu Ala Pro Gly
 740 745 750
 Glu Tyr Ser Leu Leu Val Lys Tyr Lys Asn Asn Ile Asn Gly Gln Glu
 755 760 765
 Ser Gln Thr Gln Ser Val Ile Arg Ile Thr Pro Pro Trp Tyr Leu
 770 775 780
 Ser Pro Leu Ala Tyr Met Val Tyr Phe Ile Leu Phe Ala Leu Leu Cys
 785 790 795 800
 Thr Ala Gly Ile Tyr Arg Leu Ile Tyr Ile Tyr Arg Arg Lys Gln His
 805 810 815
 Arg Met Leu Asp Lys Met Asn Arg Glu Lys Lys Glu Glu Ile Tyr Glu
 820 825 830
 Ser Lys Leu Arg Phe Phe Thr Asn Ile Thr His Glu Phe Cys Thr Pro
 835 840 845
 Leu Thr Leu Ile Tyr Gly Pro Cys Glu Lys Ile Leu Ala Asn Pro Glu
 850 855 860
 Ile Asp Ala Tyr Thr Gln Lys Tyr Ala Lys Met Ile Gln Gln Asn Thr
 865 870 875 880
 Glu Lys Leu Asn Asn Leu Ile Leu Glu Leu Leu Glu Phe Arg Arg Leu
 885 890 895
 Glu Thr Gly Asn Lys Val Leu Ser Ile Gln Gln Leu Ser Val Ser Glu
 900 905 910
 Lys Val Arg Ser Ile Ala Glu Ser Phe Glu Glu Leu Ala Glu Asn Lys
 915 920 925
 Glu Met Asn Tyr Gln Leu His Ile Ser Pro Gly Ile Glu Trp Asn Thr
 930 935 940
 Asp Ile Ser Cys Phe Asn Lys Ile Val Ser Asn Leu Ile Ser Asn Ala
 945 950 955 960
 Phe Lys Tyr Thr Pro Asp Lys Gly Ile Ile Thr Ile Glu Leu Lys Val
 965 970 975
 Glu Asn Gln Ser Leu Ile Phe Cys Ile Ser Asn Ser Gly Lys Gly Ile
 980 985 990
 Ala Lys Glu Asn Leu Ser Lys Ile Phe Asp Arg Tyr Lys Ile Leu Asp
 995 1000 1005
 Ser Val Glu Met Asn Gly Lys Asn Ser Arg Thr Gly Leu Gly Leu Ala
 1010 1015 1020
 Ile Cys Lys Ser Met Ile Thr Gln Leu Asn Gly Glu Ile Ser Val Asn
 1025 1030 1035 1040

Ser Val Leu Tyr Glu Met Thr Thr Phe Thr Val Thr Leu Pro Asn Leu
 1045 1050 1055
 Pro Ile Thr Glu Arg Asp Thr Thr Gln Thr Thr Tyr Glu Thr Arg Leu
 1060 1065 1070
 Leu His Thr Ala Thr Glu Glu Pro Ile Val Leu Glu Lys Thr Ala Ile
 1075 1080 1085
 Glu Phe Asp Met Gly Lys Arg Thr Ile Met Val Ile Asp Asp Asp Asn
 1090 1095 1100
 Ser Met Leu Trp Phe Val Ser Glu Leu Phe Ala Asp Lys Tyr Asn Val
 1105 1110 1115 1120
 Arg Ser Phe Asp Asn Ala Lys Asp Ala Leu Ser Ser Leu Glu Gln Lys
 1125 1130 1135
 Gln Pro Asp Leu Ile Ile Ser Asp Val Met Met Pro Gly Ile Asp Gly
 1140 1145 1150
 Leu Ser Phe Ala Gln Lys Ile Lys Gln His Lys Leu Trp Ser His Ile
 1155 1160 1165
 Pro Leu Ile Leu Leu Ser Ala Leu His His Glu Asp Asp Gln Val Lys
 1170 1175 1180
 Gly Ile Glu Ser Gly Ala Glu Ala Tyr Val Thr Lys Pro Phe Asn Val
 1185 1190 1195 1200
 Lys Tyr Leu Glu Lys Ile Val Tyr Arg Leu Ile Lys Arg Glu Ala Asp
 1205 1210 1215
 Leu Lys Glu Tyr Ser Ser Ile Phe Ser Ser Phe Thr Met Glu His
 1220 1225 1230
 Gly Asn Cys Ile His Lys Glu Asp Gln Glu Phe Leu Asp Lys Met Leu
 1235 1240 1245
 Glu Ile Ile Glu Lys Asn Ile Ala Asn Pro Asp Leu Gln Val Glu Leu
 1250 1255 1260
 Leu Ser Ser Glu Met Gly Tyr Ser Thr Arg Gln Phe Tyr Arg Lys Leu
 1265 1270 1275 1280
 Lys Pro Ile Thr Glu Gln Ser Pro Ala Asp Ile Ile Lys Glu Tyr Arg
 1285 1290 1295
 Leu Thr Met Ala Glu Arg Leu Leu Ile Ala Lys Asn Leu Thr Ile Glu
 1300 1305 1310
 Glu Ile Met Asp Gln Thr Gly Phe Asn Asn Arg Gly Thr Phe Tyr Lys
 1315 1320 1325
 Leu Phe Ser Lys Arg Tyr Gly Met Pro Pro Arg Gln Tyr Arg Glu Gln
 1330 1335 1340
 Gln Lys Glu Asn Val Lys Lys Glu Lys Ile Ser Gly Ile Ser Asp Glu
 1345 1350 1355 1360

<210> 9767

<211> 221

<212> PRT

<213> B.fragilis

<400> 9767

Phe Val Lys Ser Ile Asn Leu Lys Ile Met Ile Arg Leu Val Ala Phe
 1 5 10 15
 Asp Leu Asp Gly Thr Ile Gly Asp Thr Ile Pro Leu Cys Leu Ala Ala
 20 25 30
 Phe Arg Glu Ala Thr Thr Pro Tyr Val Asp His Glu Leu Ser Asp Asp
 35 40 45
 Glu Ile Ala Arg Thr Phe Gly Leu Asn Glu Glu Gly Met Ile Asn Gln
 50 55 60
 Val Val Ser Gly Asn Ser Arg Glu Lys Ala Leu Asn Asp Phe Tyr Val
 65 70 75 80
 Ile Tyr Glu Glu Met His Ala Ile Leu Cys Pro Lys Pro Phe Glu Gly
 85 90 95

Met Lys Thr Leu Ile Gly Gln Leu His Glu Arg Asn Val Ile Val Val
 100 105 110
 Leu Ile Thr Gly Lys Gly Ile Arg Ser Cys Asp Ile Thr Leu Lys Gln
 115 120 125
 Phe Gly Met Asp Gly Cys Phe Asp Arg Ile Glu Thr Gly Ser Ser Glu
 130 135 140
 Lys Asn Arg Lys Ser Glu Ala Met Lys Ala Ile Ser Leu Tyr Tyr Gly
 145 150 155 160
 Phe Lys Ser Asn Glu Met Ile Tyr Val Gly Asp Ala Val Ser Asp Ile
 165 170 175
 Glu Ala Cys Asn Ser Val Lys Ile Gln Cys Leu Ser Ala Ala Trp Ala
 180 185 190
 Ala Ser Thr Asp Cys Glu Gln Leu Glu Lys Tyr Asn Ser Gly Tyr Val
 195 200 205
 Phe Ser Ser Val Arg Leu Leu Arg Asp Phe Leu Leu Cys
 210 215 220

<210> 9768
 <211> 159
 <212> PRT
 <213> B.fragilis

<400> 9768

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Ser Ser Pro Arg Gly Trp Lys Asp Pro Arg Val Gly Gln Gln
 145 150 155

<210> 9769
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 9769

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser

65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
 290 295 300
 Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
 305 310 315 320
 Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
 325 330 335
 Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
 340 345 350
 Met Ala Glu Asn Thr Val Phe Leu Leu Thr Ala Leu Ile His Asn
 355 360 365
 Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
 370 375 380
 Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
 385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 9770

<211> 188

<212> PRT

<213> B.fragilis

<400> 9770

Val Leu Phe Tyr Leu Ser Ser Ile Val Ser Leu Gly Tyr Ile Tyr Asn
 1 5 10 15
 Leu Pro Phe Thr Lys Leu Ala Ile Leu Asp Asn Gly Thr Asn Lys Lys
 20 25 30
 Gln Ala Ile Phe Ala Leu Ser Ile Lys Leu Leu Gln Phe Ile Met Glu
 35 40 45
 Lys Asp Phe Gln Ile Pro Thr Leu Glu Ala Ile Glu Ser Leu Met Gly

50 55 60
 Lys Gly Leu Tyr Gln Ile Trp Asn Ala Leu Cys Leu Leu Ile Glu His
 65 70 75 80
 Lys Tyr Glu Met Glu Arg Leu Trp Asn Ser Gly Gly Arg Lys Trp Asn
 85 90 95
 Tyr Glu Tyr Lys Tyr Arg Arg Gly Gly Lys Thr Leu Cys Ala Leu Tyr
 100 105 110
 Ala Lys Glu Asn Ser Phe Gly Phe Met Val Ile Leu Gly Lys Gly Glu
 115 120 125
 Arg Asp Lys Phe Glu Met Ser Arg Glu Leu Phe Ser Lys Glu Val Gln
 130 135 140
 Arg Leu Tyr Asp Glu Ala Thr Val Tyr His Asp Gly Lys Trp Ile Met
 145 150 155 160
 Phe Glu Leu Arg Asn Thr Gly Leu Phe Ser Asp Ile Glu Arg Leu Leu
 165 170 175
 Glu Ile Lys Arg Leu Pro Asn Arg Lys Ser Leu Ser
 180 185

<210> 9771

<211> 500

<212> PRT

<213> B.fragilis

<400> 9771

Leu Lys Phe Leu Asn Tyr Met Gln Ile Lys Lys Leu Phe Ile Ala Leu
 1 5 10 15
 Gly Ile Val Leu Pro Leu His Met Gln Gly Gln Asn Phe Leu Ile Lys
 20 25 30
 Asp Ala Pro Glu Val Ile Glu Ser Tyr Val Asn Gln Phe Asn Arg Glu
 35 40 45
 Asp Asn Glu Leu Tyr Lys Gln Asp Ile Pro Asn Cys Gly Ala Ser Asp
 50 55 60
 Phe Leu Arg Lys Asn Ile Pro Phe Phe Glu Cys Pro Asp Lys Glu Leu
 65 70 75 80
 Glu Lys Thr Tyr Tyr Phe Arg Trp Trp Thr Tyr Arg Lys His Ile Lys
 85 90 95
 Lys Thr Pro Asp Gly Phe Val Ile Thr Glu Phe Leu Pro Asp Val Pro
 100 105 110
 Trp Ala Gly Lys Tyr Asn Thr Ile Ser Cys Ala Ala Asn His His Phe
 115 120 125
 Tyr Glu Gly Arg Trp Leu Arg Asn Ala Glu Ile Leu Ser Asp Tyr Ala
 130 135 140
 Ser Phe Trp Phe Ser Gly Ser Gly Ser Pro Arg Leu Tyr Ser Phe Gly
 145 150 155 160
 Ala Ala Asp Ala Ile Tyr Asn Tyr Tyr Leu Ile His Asn Asp Lys Met
 165 170 175
 Leu Leu Ala Asp Leu Tyr Pro Lys Leu Lys Asp Asn Phe Ala Lys Trp
 180 185 190
 Glu Glu Glu Lys Arg Asp Ser Thr Gly Met Phe Trp Gln Val Asp Asp
 195 200 205
 Arg Asp Gly Met Glu Met Ser Val Ser Gly His Leu Ser Glu Gly Gly
 210 215 220
 Arg Gly Tyr Arg Pro Thr Ile Asn Ser Tyr Met Tyr Gly Glu Ala Val
 225 230 235 240
 Ala Leu Ala Lys Ile Ala Ser Ile Val Asp Arg Asp Met Glu Ala Arg
 245 250 255
 Thr Tyr Gln Lys Lys Ala Asp Lys Leu Lys Gly Ile Ile Asn Arg Arg
 260 265 270
 Leu Trp Asp Lys Gln Ala Asp Phe Tyr Lys Val Ile Pro Leu Asn Gly

275 280 285
 Lys Met Glu Phe Ser Tyr Ala Arg Glu Leu Leu Gly Tyr Ile Pro Trp
 290 295 300
 Phe Tyr Asn Ile Pro Pro Asp Asp Tyr Ser Ile Ala Trp Lys Gln Leu
 305 310 315 320
 Phe Asp Ser Lys Gly Phe Glu Ala Ala Tyr Gly Pro Thr Thr Val Glu
 325 330 335
 Gln Arg Cys Thr Asp Phe Lys Ile Ser Tyr Glu Gly His Glu Cys Gln
 340 345 350
 Trp Asn Gly Pro Ser Trp Pro Tyr Leu Thr Ser Met Thr Leu Thr Ala
 355 360 365
 Met Ala Asn Tyr Phe Asn Ser Tyr Asp Ser Pro Ile Ile Thr Lys Lys
 370 375 380
 Asp Tyr Leu Ser Leu Leu Asn Ile Tyr Ser Asn Ser His Arg Ile Leu
 385 390 395 400
 Ser Val Asn Asn Asp Thr Ile Cys Trp Ile Asp Glu Asn Ile Asn Pro
 405 410 415
 Tyr Thr Gly Asp Trp Ile Ser Arg Thr Arg Leu Lys Ser Trp Lys Asn
 420 425 430
 Gly Thr Trp Asp Asp Ser Lys Gly Gly Val Glu Arg Gly Lys Asp Tyr
 435 440 445
 Asn His Ser Ser Phe Cys Asn Leu Ile Ile Ser Gly Leu Met Gly Val
 450 455 460
 Arg Pro Gln Glu Asp Gly Ser Ile Ile Ile Asn Pro Leu Val Pro Asp
 465 470 475 480
 Gly Cys Trp Asp Tyr Phe Cys Leu Asp Asn Val Tyr Cys Gln Gly Lys
 485 490 495
 Thr Ile Ile Pro
 500

<210> 9772

<211> 301

<212> PRT

<213> B.fragilis

<400> 9772

Val Tyr Tyr Tyr Val Leu Leu Phe Val Ile Ser Val Lys Leu Arg Phe
 1 5 10 15
 Leu Asp Tyr Ile Cys Leu Met Lys Arg Glu Asn Leu His Gln Pro Phe
 20 25 30
 Glu Ile Ser Phe Ser Glu Phe Asp Glu Ser Met Leu Lys Glu His Asp
 35 40 45
 His Thr Phe Phe Glu Leu Val Tyr Ile Leu Ser Gly Thr Gly Ile Gln
 50 55 60
 Trp Ile Asn Asn Asn Lys Phe Ser Tyr His Asp Gly His Leu Phe Met
 65 70 75 80
 Ile Thr Pro Gly Asp Ser His Ser Phe Glu Ile His Ser Thr Thr Lys
 85 90 95
 Phe Ile Asn Ile Lys Phe Asn Asp Ile Tyr Ile His Ser Ala Val Phe
 100 105 110
 Gly Thr Glu Asn Ile Lys Arg Leu Glu Phe Ile Leu Gln His Ala Asn
 115 120 125
 His Gln Pro Gly Cys Ile Leu Arg Asn Arg Thr Asp Lys Leu Leu Val
 130 135 140
 Lys Pro Met Ile Glu Ala Ile Ile Arg Glu Tyr Val Asn Arg Asn Leu
 145 150 155 160
 Tyr Ser Lys Glu Ile Ile Thr Gln Leu Ile Asn Thr Ile Ile Ile Val
 165 170 175
 Val Ala Arg Asn Ile Ala Met Phe Leu Pro Glu Gln Val Asn Glu Cys

180 185 190
 Ser Glu Glu Lys Ser Leu Gly Ile Leu Gln Tyr Ile Gln Thr Tyr Ile
 195 200 205
 Tyr Gln Ser Glu Lys Ile Lys Thr Lys Ala Ile Ser Gln His Phe Gly
 210 215 220
 Ile Ser Glu Asn Tyr Leu Gly Arg Tyr Phe Lys Lys His Thr Asn Glu
 225 230 235 240
 Thr Met Gln Gln Tyr Ile Leu Asn Tyr Lys Leu Lys Leu Val Glu Asn
 245 250 255
 Arg Leu Leu His Ser Glu Met Arg Ile Ser Glu Ile Val Ala Glu Leu
 260 265 270
 Gly Phe Thr Asp Glu Ser His Leu Asn Lys Leu Phe Lys Lys Tyr Arg
 275 280 285
 Gly Cys Ser Pro Thr Asn Phe Arg Lys Asn Asn Ala Val
 290 295 300

<210> 9773
 <211> 465
 <212> PRT
 <213> B.fragilis

<400> 9773

Ile Thr Leu Tyr Ser Asn Tyr Leu Lys Phe Met Leu Asn Thr Glu Asn
 1 5 10 15
 Ile Gln Pro Leu Ile Asp Ser Gly Glu Gly Tyr Asn Val Glu Phe Lys
 20 25 30
 Val Arg Val Pro Ser Lys Val Arg Glu Leu Thr Glu Glu Ile Cys Ala
 35 40 45
 Phe Ala Asn Ala Asp Gly Gly Tyr Leu Leu Ile Gly Val Asp Asn Asn
 50 55 60
 Gly Gln Val Ile Asp Ile Asn Leu Glu Asn Asp Lys Arg Ser Ala Ile
 65 70 75 80
 Gln Gly Ser Ile Ser Glu Ile Ser Pro Ala Leu His Cys Glu Leu Tyr
 85 90 95
 Pro Val Asn Val Gly Asn Lys Thr Val Trp Val Ile Asp Val Pro Ser
 100 105 110
 Gly Lys Asp Lys Pro Tyr Ile Phe Ser Gly Ser Ile Tyr Val Arg Glu
 115 120 125
 Gly Ala Asn Ser Gln Lys Leu Arg Thr Ala Glu Glu Met Arg Ser Phe
 130 135 140
 Phe Gln Glu Cys Asn Lys Ile Phe Phe Asp His Ile Pro Cys His Trp
 145 150 155 160
 Phe Asn Ile Tyr Thr Asp Ala Asp Glu Gln Met Ile Lys Asp Phe Arg
 165 170 175
 Thr Glu Ala Lys Leu Ser Ser Ser Thr Pro Asp Lys Gln Ile Phe Glu
 180 185 190
 Asn Leu Glu Leu Phe Thr Glu Asn Gly Thr Ala Lys Asn Gly Ala Ala
 195 200 205
 Met Phe Phe Gly Lys Gln Pro Glu Arg Lys Phe Pro His Ala Val Thr
 210 215 220
 Arg Cys Val Leu Phe Lys Gly Thr Asn Lys Val Tyr Ile Ile Asp Asp
 225 230 235 240
 Lys Thr Phe Gly Gly Ser Leu Tyr Gln Gln Tyr Leu Gln Ala Met Ser
 245 250 255
 Trp Leu Glu Ser Lys Leu Gln Val Ala Tyr Lys Ile Glu Gly Ala Gly
 260 265 270
 Pro Arg Glu Glu Ile Trp Glu Ile Pro Leu Thr Val Phe Lys Glu Ala
 275 280 285
 Ile Ile Asn Ala Leu Ser His Arg Asp Tyr Tyr Glu Gln Gly Ala Ser

290 295 300
 Ile Met Ile Glu Met Phe Asp Asp Arg Val Glu Ile Ser Asn Pro Gly
 305 310 315 320
 Gly Leu Leu Pro Ile Val Ala Lys Asn Phe Gly His Lys Ser Met Thr
 325 330 335
 Arg Asn Pro Leu Ile Phe Gly Leu Phe Thr Arg Ile His Leu Val Glu
 340 345 350
 Arg Val Ala Ser Gly Ile Pro Arg Met Gln Glu Ala Met Arg Glu Ala
 355 360 365
 Asn Leu Pro Glu Pro Glu Phe His Thr Glu Gly Met Phe Thr Val Val
 370 375 380
 Phe Lys Arg Ala Ile Ser Ile Lys His Asp Thr Val Asn Asp Thr Val
 385 390 395 400
 Asn Asp Thr Ile Asn Ser Lys Glu Lys Glu Val Leu Lys Ile Ile Lys
 405 410 415
 Gln Tyr Pro Gly Leu Asn Ser Ser Lys Ile Ala Glu Leu Ile Asn Lys
 420 425 430
 Ser Val Pro Thr Ala Lys Arg Tyr Leu Asn Ser Leu Val Arg Leu Asp
 435 440 445
 Leu Ile Glu Phe Lys Gly Ala Gln Lys Thr Gly Gly Tyr Tyr Leu Lys
 450 455 460
 Ile
 465

<210> 9774
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9774
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9775
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9775
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
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 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80

Ser Ala Arg

<210> 9776
 <211> 225
 <212> PRT
 <213> B.fragilis

<400> 9776

Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Arg Val Ser Lys Ile Ser
 1 5 10 15
 Lys Glu Asp Ser Leu Val Leu Ile Ser Ala Val Ser Pro Ile Arg Asn
 20 25 30
 Asn Tyr Asn Glu Asn Cys Ile Leu Thr Asn Asp Ala Asp Phe Asn
 35 40 45
 Ser Trp Tyr Glu Gln Ala Lys Asp Lys Ile Asp Asn Val Phe Thr Glu
 50 55 60
 Lys Ser Met Pro Lys Pro His Leu Lys His Ile Lys Ser Ala Gln Leu
 65 70 75 80
 Phe Asp Lys Gln Phe Asn Phe Thr Asp Asn Lys Leu Asp Ile Thr Gly
 85 90 95
 Phe Glu Val Tyr Ala Asn Lys Cys Ile Leu Ser Leu Leu Lys Asn Arg
 100 105 110
 Leu Lys Asp Phe Tyr Ile Gly Lys Ser Phe Thr Pro Tyr Gly Ala Cys
 115 120 125
 Pro Pro Gln Thr Phe Ala Phe Lys Ala Glu Lys Gly Val Tyr Leu His
 130 135 140
 Asn Gln Lys Tyr Val Thr Ile Ile Gly Lys Asp Leu Asn Phe Ile Leu
 145 150 155 160
 Thr Thr Asn Lys Gln Ile Asp Phe Trp His Lys Asn Ala Lys Ile Asp
 165 170 175
 Asp Gln Gly Ile Leu Val Ser Val Arg Asn Gln Ile Tyr Ser Phe Ile
 180 185 190
 Phe Pro Leu Ser Ala Asp Ile Leu Pro Asp Asp Ile Asp Ala Ile Phe
 195 200 205
 His Leu Ile Gln Thr Glu Gly His Phe Val Phe Tyr His Pro Asp Ser
 210 215 220
 Leu
 225

<210> 9777
 <211> 349
 <212> PRT
 <213> B.fragilis

<400> 9777

Tyr Pro Tyr Leu Cys Phe Ser Leu Ser Val Gly Arg Gly Lys Ser Lys
 1 5 10 15
 Gly Lys Lys Gln Lys Met Asn Met Lys Lys Asn Val Ile Gln Thr Leu
 20 25 30
 Ile Ser Leu Thr Val Ile Ile Gly Ile Cys Ser Cys Thr Thr Ser Pro
 35 40 45
 Lys Lys Thr Ile Gln Lys Glu Glu Ala Thr Gly Lys Trp Val Lys Tyr
 50 55 60
 Glu Asn Asn Pro Val Leu Gly Gly Gly Asp Leu Gly Thr Val Phe Asp
 65 70 75 80
 Ile Cys Val Leu Lys Asp Ser Asp Ser Tyr Lys Met Tyr Ser Ser Trp
 85 90 95
 Arg Pro Gln Lys Ser Ile Ala Leu Ser Thr Ser Lys Asp Gly Lys Asn

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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<400> 9778
Ser Tyr Leu Asp Leu Tyr Pro Ile Arg Thr Gly Cys Ile Ile Ser Leu
1          5          10          15
Leu Leu Tyr Cys Phe Ala Gly Arg Ser Cys Gly Ala Ser Pro Asp Ser
          20          25          30
Asp Thr Ile Leu Ile Glu Met Ala Ile Ser Ser Gly Glu Asn Ile Tyr
          35          40          45
His Ala Leu Glu Asn Tyr Leu Ser Gly Met Tyr Tyr Leu Cys Glu Pro
          50          55          60
Thr Asn Ala Leu Tyr Leu Thr
65          70

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<400> 9779
Arg Ser Ile Phe Leu Tyr Tyr His Thr Phe Glu Phe Lys Met Ser Lys
1 5 10 15
Arg Tyr Cys Gln Ser Cys Gly Met Pro Leu Arg Phe Asp Met Glu Glu
20 25 30

Trp Leu Gly Thr Asn Leu Asp Gly Ser Lys Ser Asp Thr Phe Cys Tyr
 35 40 45
 Tyr Cys Leu Lys Asp Gly Lys Tyr Thr Val Asp Val Ser Met His Glu
 50 55 60
 Met Ile Asp Ile Trp Leu Lys Tyr Val Asn Lys Tyr Asn Met Tyr Ala
 65 70 75 80
 His Thr Val Tyr Ser Pro Glu Glu Leu Lys Met Ile Leu Glu Lys Arg
 85 90 95
 Leu Pro Thr Leu Asn Arg Trp Lys Gln Lys Gln Asp Thr Lys Asn Val
 100 105 110
 His Asn Gln Ala Ile Gln Ser Ile Val Asn Tyr Ile Ser Asn His Leu
 115 120 125
 Phe Glu Asp Phe Asp Ile Ile Thr Leu Cys Gln Lys Cys Gly Met Ser
 130 135 140
 Glu Tyr His Phe Arg Arg Val Phe Lys Phe Ile Val Gly Glu Asn Ile
 145 150 155 160
 Gly Asn Tyr Ile Gln Arg Leu Arg Leu Glu Tyr Ala Ala His Leu Leu
 165 170 175
 Thr Ser Thr Glu Tyr Thr Leu Ser Arg Ile Ala Glu Leu Ala Gly Tyr
 180 185 190
 Gln Asn Lys Tyr Ser Ile Ala Lys Ala Phe Lys Lys His Phe Gly Val
 195 200 205
 Ser Thr Ser Leu Phe Lys Glu Arg Phe Thr Pro Arg Lys Arg Asn Ala
 210 215 220
 His Thr Ser Leu Thr Pro Arg Ile Ile Met Ile Asn Lys Met Phe Val
 225 230 235 240
 Ser Cys Leu Glu Val Gly Lys Ala Tyr Glu Asn Lys Phe Gln Tyr Lys
 245 250 255
 Met Val Trp Asp Lys Leu Leu Tyr Tyr Ala Arg Phe Asn Arg Ile Asp
 260 265 270
 Lys Lys His Thr Asn Phe Val Ser Leu Ser Leu Asp Asn Pro Ala Ile
 275 280 285
 Thr Pro Glu Asp Lys Cys Arg Phe Tyr Val Gly Ile Ile Met Asn Asp
 290 295 300
 Ile Pro Asp Ala Lys Leu Asn Thr Val Gln Ile Pro Asn Gly Arg Tyr
 305 310 315 320
 Ala Ile Phe Arg His Ile Gly Ser Tyr Asp Phe Leu Cys Asp Leu Tyr
 325 330 335
 Arg Ile Ile Tyr Glu Glu Trp Phe Pro Asp Ser Gln Tyr Tyr Pro Gln
 340 345 350
 Asn Thr Phe Ser Phe Glu Val Tyr Ile Asn Ser Pro Cys Asp Thr Asp
 355 360 365
 Val Pro Glu Leu Ile Thr Asp Ile Tyr Ile Pro Val Leu Lys Lys Lys
 370 375 380
 Ile Phe Thr Asp Ile Lys
 385 390

<210> 9780

<211> 118

<212> PRT

<213> B.fragilis

<400> 9780

Thr Val Ile Arg Glu Arg Thr Lys Leu Ser Arg His Cys Ile Phe Lys
 1 5 10 15
 Glu His Asn Asp Asn Cys Arg Lys Leu Ile Gly Thr Asp Tyr Ala Asn
 20 25 30
 Ile Thr Val Arg His Tyr Asp Asn Cys Leu Lys His Leu Met Lys Leu
 35 40 45

Val Lys Arg Asp Tyr Lys Val Asp Asp Met Leu Leu Arg Glu Val Asn
 50 55 60
 Gly Glu Leu Val Tyr Ile Leu Phe Val Met Phe Leu Ser Asp Lys Val
 65 70 75 80
 Cys Gln Ser Ile Lys Lys Leu Gly Gln Phe Ala Arg Leu Ser Leu Tyr
 85 90 95
 His Val Leu Met Leu Leu Val Thr Ile Ala Tyr Leu Asp Ile Glu Gln
 100 105 110
 Pro Phe Asn Pro Phe Gly
 115

<210> 9781

<211> 112

<212> PRT

<213> B.fragilis

<400> 9781

Lys Arg Phe Gly Met Ser Phe Phe Ile Lys Arg Ser Lys Leu Leu Lys
 1 5 10 15
 Asn Gly Glu Ala Ser Val Cys Val Arg Val Thr Tyr Asp Arg Leu Tyr
 20 25 30
 Val Glu Leu Gln Leu Lys Arg Ser Ile Lys Val Pro Leu Trp Leu Gln
 35 40 45
 Glu Lys Glu Lys Ser Thr Gly Lys Asp Leu Asn Ser Val Glu Leu Asn
 50 55 60
 Tyr Tyr Ile Asp Val Leu Arg Val Lys Phe Tyr Gln Ile Tyr Lys Asn
 65 70 75 80
 Leu Glu Pro Glu Gly Lys Ile Ile Ser Ala Arg Ala Ile Val Asn Arg
 85 90 95
 Tyr Gln Gly Lys Asp Glu Thr Phe Lys Thr Leu Tyr Ile Gln Gly Ala
 100 105 110

<210> 9782

<211> 157

<212> PRT

<213> B.fragilis

<400> 9782

Tyr Ser Met Gly Lys Ile Ser Glu Ile Ala Leu Phe Gln Gln Ser Glu
 1 5 10 15
 Thr Tyr Ala Leu Val Val Glu Ile Arg Thr Thr Val Lys Glu Ile Ala
 20 25 30
 Met Val Ile Gly Arg Ser Phe Met Glu Ile Glu Thr Leu Phe Lys Glu
 35 40 45
 Gln Asn Ala Val Met Ala Asp Val Pro Phe Val Glu Tyr Leu Asn Phe
 50 55 60
 Glu Ser Met Ser Glu Gly Ile His Met Ile Ile Gly Phe Lys Ser Ala
 65 70 75 80
 Lys Val Leu Cys Gly Lys Gly Asn Ile Arg Ala Ile Thr Ile Pro Gly
 85 90 95
 Arg Lys Ile Val Ser Cys Leu His Lys Gly Asn Tyr Thr Glu Leu Ala
 100 105 110
 Ser Leu Tyr Arg Glu Met Gln Glu Trp Ile Ala Ala Lys Gly Tyr Lys
 115 120 125
 Ser Ser Gly Ala Ser Ile Glu Tyr Tyr Tyr Ser Lys Pro Gly Thr Ser
 130 135 140
 Glu Glu Glu Leu Val Thr Lys Val Glu Met Pro Val Leu
 145 150 155

<210> 9783
 <211> 658
 <212> PRT
 <213> B.fragilis

<400> 9783

Lys	Arg	Lys	Gly	Met	Lys	Asn	Lys	Cys	Met	Leu	Val	Val	Ile	Leu	Leu
1				5				10						15	
Ile	Leu	Ser	Gly	Thr	Ala	Phe	Ala	Lys	Ile	Val	Leu	Pro	Pro	Ile	Phe
			20					25					30		
Ser	Asp	Asn	Met	Val	Leu	Gln	Gln	Gln	Thr	Asn	Ala	Pro	Ile	Trp	Gly
		35					40					45			
Glu	Ala	Gln	Pro	Met	Lys	Thr	Val	Lys	Val	Thr	Thr	Ser	Trp	Asp	Gly
	50					55					60				
Lys	Thr	Tyr	Ala	Val	Gln	Ala	Asp	Lys	Ala	Gly	Lys	Trp	Lys	Val	Thr
65					70					75					80
Val	His	Thr	Pro	Val	Ala	Gly	Gly	Pro	Tyr	Glu	Ile	Ala	Leu	Thr	Asp
				85				90						95	
Gly	Lys	Lys	Val	Asn	Leu	Lys	Asn	Val	Met	Ile	Gly	Glu	Val	Trp	Ile
			100					105					110		
Cys	Ser	Gly	Gln	Ser	Asn	Met	Glu	Met	Pro	Leu	Gly	Gly	Trp	Gly	Lys
		115					120					125			
Ile	Thr	Asn	Tyr	Gln	Lys	Glu	Ile	Ala	Glu	Ala	Gly	His	Ser	Asn	Ile
	130					135					140				
Arg	Leu	Leu	Gln	Ile	Glu	Gln	Ile	Asn	Ser	Thr	Gln	Pro	Glu	Thr	Asn
145					150					155					160
Ile	Lys	Val	Arg	Asn	Asp	Ser	Trp	Gln	Val	Cys	Ser	Pro	Ile	Thr	Ile
				165					170					175	
Pro	Glu	Phe	Ser	Ala	Thr	Ala	Tyr	Phe	Phe	Gly	Arg	Glu	Ile	Ser	Glu
			180					185					190		
Lys	Gln	Asn	Val	Pro	Val	Gly	Leu	Ile	His	Thr	Ser	Trp	Gly	Gly	Thr
		195					200					205			
Asn	Val	Glu	Ser	Trp	Ile	Ser	Gly	Glu	Val	Leu	Lys	Glu	Met	Pro	Glu
	210					215						220			
Phe	Val	Lys	Thr	Val	Glu	Ser	Ile	Gln	Lys	Met	Pro	Gly	Asp	Lys	Lys
225					230					235					240
Ile	Leu	Lys	Ala	Glu	Tyr	Leu	Lys	Glu	Leu	Thr	Ala	Trp	Asn	Asn	Arg
				245					250					255	
Val	Asp	Glu	Gly	Phe	Ala	Glu	Gly	Lys	Pro	Val	Arg	Ala	Ala	Ala	Ser
			260					265					270		
Leu	Asp	Asp	Lys	Asp	Trp	Glu	Ser	Met	Asn	Phe	Pro	Gly	Glu	Val	Gly
		275					280					285			
Pro	Gln	Leu	Ala	Gly	Phe	Asp	Gly	Val	Met	Trp	Val	Arg	Lys	Glu	Ile
	290					295						300			
Glu	Ile	Pro	Ala	Ser	Trp	Ala	Gly	Lys	Asp	Val	Gln	Leu	Ser	Leu	Gly
305					310					315					320
Ala	Ile	Asp	Asp	Asn	Asp	Ile	Thr	Tyr	Trp	Asn	Gly	Ile	Glu	Ile	Gly
				325					330					335	
Arg	Thr	Asp	Gly	Pro	Thr	Leu	Gln	Arg	Lys	Tyr	Ile	Ile	Pro	Glu	Lys
			340					345					350		
Met	Val	Lys	Ala	Gly	Lys	Ala	Ile	Leu	Ala	Ile	Arg	Val	Leu	Asp	Thr
		355					360					365			
Gly	Gly	Asn	Cys	Gly	Ile	Trp	Gly	Asp	Leu	Tyr	Leu	Arg	Ser	Thr	Asn
	370					375					380				
Asp	Glu	Gln	Ile	Ser	Leu	Ser	Gly	Asp	Trp	Lys	Tyr	Gln	Val	Ala	Ala
385					390					395					400
Asp	Thr	His	Lys	Val	Gly	Ala	Leu	Pro	Val	Asp	Arg	Ser	Val	Asp	Pro
				405					410					415	
Asn	Leu	Pro	Thr	Ser	Leu	Tyr	Asn	Ala	Met	Ile	His	Pro	Leu	Ile	Ser

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420 425 430
 Tyr Gly Ile Arg Gly Ala Ile Trp Tyr Gln Gly Glu Asn Asn Ser Ser
 435 440 445
 Arg Ala Tyr Gln Tyr Arg Glu Leu Phe Pro Leu Val Ile Glu Asn Trp
 450 455 460
 Arg Arg Asp Trp Lys Gln Asp Phe Pro Phe Tyr Phe Val Gln Leu Ala
 465 470 475 480
 Asn Phe Met His Glu Val Ser Gln Pro Ala Glu Ser Glu Trp Ala Glu
 485 490 495
 Leu Arg Glu Ala Gln Met Arg Ala Leu Ala Val Gly Asn Thr Gly Met
 500 505 510
 Ala Val Ile Ile Asp Arg Gly Asp Ala Asn Asp Ile His Pro Lys Asp
 515 520 525
 Lys Gln Thr Val Gly His Arg Leu Ala Leu Ile Ala Arg Ala Lys Thr
 530 535 540
 Tyr Gly Glu Lys Val Pro Tyr Ser Gly Pro Ile Tyr Arg Ser His Gln
 545 550 555 560
 Ile Val Gly Asn Lys Ile Ile Leu Ser Phe Asp His Thr Asp Gly Gly
 565 570 575
 Leu Lys Ser Ser Asp Gly Lys Glu Leu Lys Gly Phe Ala Ile Ala Gly
 580 585 590
 Arg Asn His Glu Phe His Trp Ala Lys Ala Glu Ile Asp Gly Asp Lys
 595 600 605
 Ile Ile Val Ser Ala Pro Glu Ala Val Pro Tyr Pro Val Ala Val Arg
 610 615 620
 Tyr Ala Trp Ala Asn Asn Pro Val Cys Asn Leu Tyr Asn Gly Ala Gly
 625 630 635 640
 Leu Pro Ala Ser Pro Phe Arg Thr Asp Asp Trp Arg Gly Ile Thr Gln
 645 650 655
 Lys Asp

<210> 9784
 <211> 514
 <212> PRT
 <213> B.fragilis

<400> 9784
 Lys Tyr Asn Ile Met Tyr Lys Ile Thr Leu Lys Asn Ile Lys Ala Ile
 1 5 10 15
 Thr Asn Leu Glu Phe His Phe Pro Glu Lys Asn Gly Val Tyr Leu Leu
 20 25 30
 Thr Gly Thr Asn Gly Cys Gly Lys Thr Thr Leu Leu Ile Ala Leu Asn
 35 40 45
 Arg Leu Gly Asp Asn Leu Ala Phe Ser Arg Asn Leu Arg Thr Ser Ser
 50 55 60
 Ala Gly Phe Asp Ser Phe Lys Asp Ala Gln Ile Ile Tyr Ser Thr Gln
 65 70 75 80
 Asn Glu Ser Val Thr Tyr His Arg Thr Gly Ile Arg Trp Val Pro Thr
 85 90 95
 Pro Lys Ser Lys Ser Asn Leu Ile Lys Thr Phe Pro Cys Gln Asn Ile
 100 105 110
 Leu Tyr Leu Ser Thr Ser Gly Leu Arg Phe Tyr Ala Gln Glu Pro Lys
 115 120 125
 Asp Leu Lys Asp Tyr His His Asn Thr Val Ser Asp Glu Ile Ile Asn
 130 135 140
 Pro Leu Asn Asp Ile Leu Gln Thr Glu Lys Phe Arg Asn Leu Lys Tyr
 145 150 155 160
 Ile Lys Val Lys Asn Ile Lys Gly Lys Gln Arg Arg Leu His Arg Asn

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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<400> 9785

Arg	Ser	Asn	Ile	Leu	Asp	Lys	Phe	Ser	Leu	Ala	Ile	Pro	Phe	Pro	Glu
1				5					10					15	
Leu	Asp	Ile	Gln	Lys	Ile	Asn	Asp	Trp	Phe	Ser	Thr	Phe	Asn	Ser	Ile
		20						25					30		
Val	Ile	Ile	Pro	Leu	Ser	Gly	Val	Tyr	Leu	Lys	Ala	Leu	Asp	Ile	Lys
		35					40					45			
Leu	Leu	Thr	Ile	Leu	Leu	Lys	Gln	Leu	Ile	Ser	Val	Phe	His	Ser	Met

50
Pro Gly Glu Ile Cys Asn
65 70

60

<210> 9786
<211> 82
<212> PRT
<213> B.fragilis

<400> 9786
Tyr Ser Asp Met Lys Asn Leu Leu Glu Gln Arg Phe Phe Arg Leu Leu
1 5 10 15
Ser Glu Cys Ser Gln Arg Lys Val Ser Val Phe Glu Leu Ala Glu Ala
20 25 30
Ile Glu Glu Leu Ala Met His Val Ala Asn Phe Gly Ile Asn Glu Gln
35 40 45
Asp Tyr Ser Val Leu Leu Arg Tyr Phe Ser Phe Gly Leu His Arg Leu
50 55 60
Lys Ser Tyr Arg Met Arg Phe Glu Gln Glu Lys Asn Ala Leu Phe Ala
65 70 75 80
Phe Asn

<210> 9787
<211> 74
<212> PRT
<213> B.fragilis

<400> 9787
Thr Met Lys Ile Ala Lys Lys Leu Leu Leu Val Ile Ser Tyr Ile Ile
1 5 10 15
Tyr Leu Leu Ser Phe Val Lys Arg Arg Lys Glu Ile Ile Phe Val Leu
20 25 30
Ser Ile Leu His Glu Arg Thr Thr Ala Lys Ala His Ser Lys Leu Met
35 40 45
Arg Lys Phe Met Glu Tyr Ala Glu Ile Lys Glu Tyr Lys Ala Leu Asn
50 55 60
Ile Ser Val Val Thr Leu Gln Gly Glu Phe
65 70

<210> 9788
<211> 220
<212> PRT
<213> B.fragilis

<400> 9788
Asn Cys Tyr Phe Leu Ile Asn Pro His Gly Arg Glu Arg Met Lys Thr
1 5 10 15
Glu Met Glu Lys Cys Leu Ala Gly Glu Trp Tyr Asp Cys His Ala Pro
20 25 30
Val Phe Leu Glu Leu Lys Gly Lys Thr His Arg Leu Leu Met Arg Tyr
35 40 45
Asn Ser Leu Ser Tyr Glu Gln Lys Glu Glu Lys Tyr Ala Ile Leu Lys
50 55 60
Glu Met Phe Gly Ser Ile Gly Thr Glu Val Ser Val Gly His Ser Phe
65 70 75 80
Leu Cys Asp Tyr Gly Cys Asn Ile His Ile Gly Asp Asn Val Thr Val
85 90 95
Asn Met Gly Cys Val Phe Val Asp Cys Asn Lys Ile Thr Val Gly Asn

100	105	110
Asn Val Leu Ile Ala Pro	Asn Val Gln Ile Tyr Thr	Ala Thr His Pro
115	120	125
Ile Asp Leu Asn Glu Arg	Leu Thr Pro Val Glu Ala	Pro Glu Gly Val
130	135	140
Arg Tyr Val Arg His Thr	Phe Ala Leu Pro Val Thr	Val Glu Asp Gly
145	150	155
Cys Trp Ile Gly Gly	Val Ile Ile Leu Pro Gly	Val Thr Ile Gly
165	170	175
Lys Gly Ser Val Ile Gly	Ala Gly Ser Val Val Thr	Thr Asn Val Pro
180	185	190
Ala Asn Ser Leu Ala Val	Gly Asn Pro Cys Arg Val	Ile Arg Gln Ile
195	200	205
Asn Lys Ser Glu Asn Tyr	Asp Pro Ala Gly Ser Phe	
210	215	220

<210> 9789
 <211> 170
 <212> PRT
 <213> B.fragilis

<400> 9789

Asp Met Asn Phe Leu Glu Leu Thr Lys Lys Arg Phe Ser Val Arg Asn	
1 5 10 15	
Tyr Lys Ser Asp Arg Val Glu Gln Asp Lys Ile Asp Tyr Ile Ile Glu	
20 25 30	
Cys Ala Arg Leu Ala Pro Ser Ala Val Asn Tyr Gln Pro Trp His Phe	
35 40 45	
Met Val Val Val Ser Glu Glu Gln Lys Gln Asn Leu Arg Gln Cys Tyr	
50 55 60	
Asn Arg Glu Trp Phe Ala Arg Ala Pro Val Tyr Ile Val Val Cys Ala	
65 70 75 80	
Asp Lys Ser Ile Ala Trp Val Arg Lys Ser Asp Asn Lys Asn His Ala	
85 90 95	
Asp Ile Asp Ala Ala Ile Ala Thr Glu His Ile Cys Leu Ala Ala Ala	
100 105 110	
Glu Ile Gly Leu Gly Ser Cys Trp Val Cys Asn Phe Asp Pro Glu Leu	
115 120 125	
Phe Lys Ala Asn Phe Arg Leu Ser Ser Glu Arg Tyr Pro Val Ala Ile	
130 135 140	
Val Ser Leu Gly Tyr Ile Gln Glu Gln Pro Asp His Phe Thr Ile Arg	
145 150 155 160	
Lys Asp Lys Asp Glu Ile Val Thr Phe Leu	
165 170	

<210> 9790
 <211> 260
 <212> PRT
 <213> B.fragilis

<400> 9790

Ser Arg Thr Val Val Lys Thr Lys Asp Thr Thr Val Val Phe Ile Lys	
1 5 10 15	
Pro Asn Ile Thr Leu Ser Gly Val Glu Lys Cys Ser Thr Gly Tyr Glu	
20 25 30	
Leu Ala Lys Gly Ala Asp Pro Asp Ala Asn Glu Gln Glu Thr Ile Ser	
35 40 45	
Gly Ser Ile Lys Gly Ser Ile Ile Phe Arg Tyr Ala Glu Ala Leu Leu	
50 55 60	

Ile Tyr Ala Glu Ala Arg Ala Glu Leu Gly Asn Ile Thr Gln Asn Asp
 65 70 75 80
 Leu Asp Ile Thr Ile Asn Lys Leu Arg Asp Arg Val Gly Met Pro His
 85 90 95
 Leu Thr Leu Ser Val Gly Tyr Thr Asp Pro Lys Gly Asp Phe Thr Ala
 100 105 110
 Ala Arg Gly Tyr Glu Gly Val Pro Val Ser Asn Leu Leu Gln Glu Ile
 115 120 125
 Arg Arg Glu Arg Arg Ile Glu Leu Ala Cys Glu Gly Tyr Arg His Asp
 130 135 140
 Asp Leu Lys Arg Trp Arg Ala His His Leu Trp Asn His Asp Arg Ile
 145 150 155 160
 Gln Gly Ala Asn Ala Ala Gln Phe Glu Asn Leu Asp Trp Leu Val Lys
 165 170 175
 Tyr Phe Gln Asn Asp Phe His Ile Pro Ala Ala Ile Asn Lys Ala Asp
 180 185 190
 Phe Met Glu Lys Val Gly His Trp Ser Pro Glu Arg Asn Gln Asp Asn
 195 200 205
 Tyr Trp Val Asp Ser Glu Gly Tyr Phe Glu Pro Tyr Gln Arg His Ile
 210 215 220
 Pro Asp Gly His Phe His Phe Asp Pro Thr Lys Ala Tyr Leu Gln Pro
 225 230 235 240
 Ile Pro Thr Glu Gln Leu Val Leu Asn Pro Asp Leu Lys Gln Asn Pro
 245 250 255
 Gly Trp Glu Lys
 260

<210> 9791

<211> 174

<212> PRT

<213> B.fragilis

<400> 9791

Pro Ile Leu Val Ser Thr Asn Arg Ile Thr Ala Phe Tyr Ser Asp Ile
 1 5 10 15
 Phe Pro Leu Val Tyr Ile Val Leu Asn Arg Thr Val Cys Gly Leu Ser
 20 25 30
 Lys Lys Lys Met Pro Tyr Leu His Leu Ile Asp Glu Ala Ile Gly Leu
 35 40 45
 Leu Asn Thr Glu Ile Arg Leu Ile Glu Trp Arg Ile Lys Tyr Thr Glu
 50 55 60
 Gln Leu Gln Gln Arg Ala Asn Lys Gln Phe Leu Ser Pro Leu Phe Leu
 65 70 75 80
 Ala Asp Lys Thr Thr Leu Ile Asn Ile Met Glu Met Val Ser Gly Leu
 85 90 95
 Phe Leu Ser Lys Ser Ile Ile Tyr Gln Asn Gly Lys Pro Ala Tyr Trp
 100 105 110
 Val Asp Leu Ser Lys Gly Val Glu Trp Leu Phe Asn Ile Lys Ile Gly
 115 120 125
 Asp Cys Tyr Gln Lys His Glu Asp Val Ile Lys Arg Lys Pro Gly Lys
 130 135 140
 Leu Thr Glu Phe Leu Asn Gly Leu Ala Asp Phe Ile Arg Lys Glu His
 145 150 155 160
 Asp Lys Lys Asp Ile His Gln Phe Pro Val Tyr Leu Thr Gln
 165 170

<210> 9792

<211> 654

<212> PRT

<213> B.fragilis

<400> 9792

Asn	Thr	Ser	Phe	Ser	Met	Lys	Lys	Gln	Leu	Leu	Leu	Leu	Ile	Phe
1			5					10					15	
Ser	Ile	Ser	Leu	Tyr	Ile	Gln	Gly	Gln	Asn	Ile	His	Lys	Leu	Ala
		20					25					30		Ser
Pro	Asp	Gly	Asn	Ile	Gln	Ile	Ser	Val	Asn	Leu	Ser	Asp	Lys	Ile
	35					40					45			Tyr
Tyr	Asp	Val	Ile	Cys	Arg	Asn	Glu	Thr	Leu	Leu	Lys	Gln	Cys	His
	50				55						60			Leu
Ala	Met	Glu	Ile	Gly	Asp	Gln	Glu	Leu	Gly	Thr	Asn	Pro	Lys	Met
65					70					75				80
Lys	Val	Ser	His	Lys	Asn	Ile	Asp	Glu	Ser	Leu	Lys	Pro	Val	Ile
			85					90					95	Pro
Leu	Lys	Phe	Ser	Ser	Val	Ser	Asn	Arg	Tyr	Asn	Gln	Leu	Leu	Leu
		100					105					110		Asp
Phe	Lys	Gly	Gly	Tyr	Ser	Val	Glu	Phe	Arg	Ala	Phe	Asn	Asp	Gly
	115					120					125			Ile
Ala	Tyr	Arg	Phe	Ile	Thr	Asn	Lys	Lys	Gly	Met	Ile	Asn	Val	Lys
	130					135					140			Asn
Glu	Thr	Leu	Gln	Val	Asn	Phe	Pro	Asp	Asn	Tyr	Leu	Leu	His	Met
145				150					155					160
Gln	Ser	Gly	Ser	Phe	Lys	Thr	Ala	Tyr	Glu	Glu	Tyr	Thr	His	Leu
			165					170					175	
Tyr	Ser	Lys	Glu	Trp	Lys	Ser	Ser	Ala	Ser	Met	Ala	Leu	Leu	Pro
		180					185					190		Ile
Leu	Ile	Asp	Thr	Gln	Lys	Gly	Ser	Lys	Ile	Leu	Ile	Ser	Glu	Thr
	195					200					205			Ser
Leu	Thr	Asp	Tyr	Pro	Ala	Val	Phe	Leu	Lys	Ser	Asn	Gly	Ser	Asn
	210				215					220				Gly
Met	Val	Ser	Val	Phe	Pro	Arg	Val	Pro	Leu	Glu	Phe	Gly	Glu	Asp
225				230					235					240
Asp	Arg	Ser	Val	Lys	Ile	Leu	Lys	Glu	Ala	Asp	Tyr	Ile	Ala	Gln
			245					250					255	Thr
Ser	Gly	Lys	Arg	Asn	Phe	Pro	Trp	Arg	Tyr	Phe	Val	Ile	Ser	Thr
	260						265					270		Glu
Asp	Ser	Gln	Leu	Ile	Glu	Asn	Thr	Met	Ser	Tyr	Arg	Leu	Ala	Glu
	275					280					285			Lys
Asn	Ile	Leu	Glu	Asp	Thr	Ser	Trp	Ile	Lys	Pro	Gly	Leu	Ala	Ser
	290				295						300			Trp
Glu	Trp	Trp	Asn	Gly	Ala	Thr	Pro	Tyr	Gly	Pro	Asp	Val	Asn	Phe
305				310						315				320
Ala	Gly	Cys	Asn	Leu	Asp	Thr	Tyr	Lys	Tyr	Phe	Ile	Asp	Phe	Ala
			325						330				335	Ala
Asn	Tyr	Gly	Ile	Pro	Tyr	Ile	Ile	Met	Asp	Glu	Gly	Trp	Ala	Met
		340				345						350		Ser
Thr	Arg	Asp	Pro	Tyr	Thr	Pro	Asn	Pro	Ala	Val	Asp	Val	His	Glu
	355					360						365		Leu
Ile	Arg	Tyr	Gly	Lys	Glu	Lys	Asn	Val	Gly	Ile	Val	Leu	Trp	Leu
	370				375						380			Thr
Trp	Leu	Thr	Val	Glu	Asn	Phe	Gly	Leu	Phe	Glu	Thr	Phe	Glu	Lys
385				390					395					400
Trp	Gly	Val	Lys	Gly	Val	Lys	Ile	Asp	Phe	Met	Asp	Arg	Ser	Asp
			405					410					415	Gln
Trp	Met	Val	Asn	Tyr	Tyr	Glu	Arg	Val	Ala	Arg	Glu	Ala	Ala	Lys
		420				425						430		His
His	Leu	Phe	Val	Asp	Phe	His	Gly	Ala	Phe	Lys	Pro	Ala	Gly	Leu
	435					440						445		Glu

Tyr Lys Tyr Pro Asn Val Leu Ser Tyr Glu Gly Val Arg Gly Met Glu
 450 455 460
 Gln Met Gly Gly Cys Arg Pro Asp Asn Ser Ile Tyr Leu Pro Phe Met
 465 470 475 480
 Arg Asn Ala Val Gly Ala Met Asp Tyr Thr Pro Gly Ala Met Leu Ser
 485 490 495
 Met Gln Pro Glu Ile Tyr Cys Ser Glu Arg Pro Asn Ser Ala Ser Ile
 500 505 510
 Gly Thr Arg Ala Tyr Gln Met Ala Leu Phe Val Ile Phe Glu Ser Gly
 515 520 525
 Leu Gln Met Met Ala Asp Asn Pro Thr Leu Tyr Tyr Arg Asn Asp Glu
 530 535 540
 Cys Thr Arg Tyr Ile Thr Gln Val Pro Gln Thr Trp Asp Glu Thr Ile
 545 550 555 560
 Ala Leu Lys Ala Lys Ala Gly Glu Tyr Val Ile Val Ala Lys Arg Lys
 565 570 575
 Gly Asp Lys Trp Tyr Ile Gly Gly Met Thr Asn Asn Arg Gln Gln Glu
 580 585 590
 Arg Thr Phe Glu Leu Asp Phe Asp Phe Leu Lys Glu Gly Gln Ser Tyr
 595 600 605
 Arg Met Thr Ser Phe Glu Asp Gly Val Asn Ala Asn Arg Gln Ala Met
 610 615 620
 Asp Tyr Arg Lys Lys Glu Tyr Thr Leu Lys Lys Gly Asp Lys Ile Ile
 625 630 635 640
 Val Arg Leu Ala Arg Asn Gly Gly Phe Ala Ser Val Ile Glu
 645 650

<210> 9793

<211> 118

<212> PRT

<213> B.fragilis

<400> 9793

Lys Ile Arg Thr His Cys Thr Glu Asp Ile Met Arg Ala Val Lys Ala
 1 5 10 15
 Ala Pro Phe Arg Asn Arg Pro Val Arg Arg Leu Asn Phe Ala Ala Trp
 20 25 30
 Cys Ser Ala Ile Ala Ala Thr Leu Leu Gly Leu Trp Val Ala Glu
 35 40 45
 Ala Val Ala Val Asp Pro Ile Leu Ser Ser Glu Val Thr Arg Ile Pro
 50 55 60
 Lys Pro Tyr Gln Glu Gln Thr Leu Thr Asp Glu Arg Asn Tyr Glu Arg
 65 70 75 80
 Leu Met Thr Gly Glu Lys Arg Glu Ile Phe Phe Ser Ala Ser Arg Ser
 85 90 95
 Arg Lys Lys Lys Met Phe Lys Arg Glu Arg Leu Tyr Thr Arg Tyr Glu
 100 105 110
 Gln Ile Met Lys Asn Glu
 115

<210> 9794

<211> 98

<212> PRT

<213> B.fragilis

<400> 9794

Glu Arg Arg Ala Ser Gly Gln Pro Asp Ala Leu Phe Phe Cys Tyr Ile
 1 5 10 15
 Leu Tyr Ala Asn Pro Ser Asn Val Asn Ser Met Lys His Leu Arg Ile

	20		25		30
Ile Cys Ile Pro Thr Leu Thr Phe Ala Arg Leu Leu Met Phe Thr Pro					
	35		40		45
Ser Ile Leu Gln Ala Gln Asp Lys Pro Val Phe Pro Ile Asp Ser Leu					
	50		55		60
Ile Thr Val Gly Tyr Ala Ser Gly Asn Lys Lys Asn Ile Ser Gly Ser					
65		70		75	80
Val Glu Lys Ile Thr Glu Leu Gly Met Asn Lys Asp Gln Ile Thr Asp					
	85		90		95
Pro Leu					

<210> 9795

<211> 788

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (782)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9795

Thr Leu Asn Phe Glu Cys Met Lys Gln Val Asn Leu Arg Ile Tyr Gln					
1	5		10		15
Thr Ile Leu Thr Leu Leu Val Gly Leu Phe Leu Ser Ala Gly Ala Tyr					
	20		25		30
Ala Gln Gln Ile Ser Val Arg Gly Ile Val Lys Asp Gln Met Gly Glu					
	35		40		45
Pro Val Ile Gly Ala Asn Val Leu Val Lys Gly Thr Ser Asn Gly Val					
	50		55		60
Ile Thr Asp Ile Asp Gly Lys Phe Ala Leu Ser Ala Ala Lys Asn Asp					
65		70		75	80
Ile Leu Ile Ile Ser Phe Val Gly Phe Met Ser Gln Glu Ile Pro Val					
	85		90		95
Thr Gly Lys Asp Leu Met Val Thr Leu Lys Glu Asp Thr Gly Leu Leu					
	100		105		110
Asp Glu Val Val Val Leu Gly Tyr Gly Ala Asn Ala Arg Lys Gln Asp					
	115		120		125
Leu Ser Ala Ala Val Gly Val Leu Ser Asn Thr Asp Leu Thr Val					
	130		135		140
Arg Pro Val Ser Ser Thr Glu Ser Leu Leu Gln Gly Gln Leu Ala Gly					
145		150		155	160
Val Thr Val Gln Ser Asn Gly Gly Asp Pro Thr Ser Thr Pro Ser Ile					
	165		170		175
Val Ile Arg Gly Gln Gly Ser Gln Asn Gly Asp Asn Val Leu Trp Val					
	180		185		190
Val Asp Gly Val Pro Gly Ala Pro Ile Ala Ser Met Ser Asp Ile Glu					
	195		200		205
Ser Ile Val Val Leu Lys Asp Ala Ala Ser Ala Ala Ile Tyr Gly Ala					
	210		215		220
Gln Ser Gly Ala Gly Gly Val Ile Leu Val Thr Thr Lys Lys Ala Lys					
225		230		235	240
Ala Gly Ile Pro Thr Leu Ser Tyr Glu Gly Thr Tyr Gly Ile Arg Gln					
	245		250		255
Ala Thr Asn Leu Pro Glu Pro Leu Asn Ala Glu Glu Glu Leu Glu Met					
	260		265		270
Arg Lys Arg Ser Tyr Ala Asn Ala Asn Val Thr Leu Pro Asp Gly Trp					
	275		280		285

Asn	Ile	Glu	Lys	Asn	Pro	Trp	Ile	Gly	Thr	Thr	Arg	Thr	Asn	Trp	Met
290						295					300				
Asp	Glu	Ile	Phe	Arg	Thr	Ala	Phe	Tyr	Gln	Arg	His	Asn	Ile	Ala	Leu
305					310					315					320
Asn	Val	Gly	Thr	Asp	Asn	Tyr	Ser	Ser	Arg	Leu	Ser	Phe	Ser	Phe	Asp
				325					330					335	
Asn	Asp	Glu	Gly	Val	Leu	Ile	Asn	Thr	Tyr	Asn	Lys	Asn	Tyr	Ala	Ile
		340						345					350		
Arg	Tyr	Asn	Gly	Lys	Phe	Asp	Leu	Asn	Lys	Trp	Val	Ser	Ile	Ser	Glu
	355						360					365			
Asp	Leu	Val	Trp	Lys	Asn	Thr	Glu	Asn	Arg	Ser	Lys	Asp	Thr	Asn	Asp
370						375					380				
Ala	Tyr	Thr	Gly	Pro	Val	Leu	Ser	Ala	Ile	Tyr	Met	Pro	Ala	Ser	Ala
385					390					395					400
Thr	Val	Tyr	Asn	Pro	Leu	Asp	Gly	Thr	Trp	Gly	Gly	Thr	Thr	Thr	Glu
				405					410					415	
Asp	Pro	Glu	Tyr	Ile	Ala	Lys	Tyr	Gly	Ser	Asn	Phe	Ala	Gly	Ala	His
		420						425					430		
Gly	Asp	Ala	Val	Asn	Pro	Val	Arg	Leu	Leu	Arg	Ala	Glu	Asn	Arg	Phe
	435						440					445			
Asn	Arg	Thr	Ser	Asp	Val	Trp	Ser	Thr	Thr	Ser	Leu	Gln	Ile	Ala	Asn
450						455					460				
Ile	Ile	Gln	Gly	Leu	Lys	Phe	Thr	Ser	Arg	Phe	Thr	Tyr	Asn	Leu	Lys
465					470					475					480
Thr	Asn	Asn	Tyr	Lys	Asn	Phe	Arg	Pro	Ile	Gln	Asp	Glu	Pro	Gly	Lys
				485					490					495	
Pro	Asn	Asn	Ser	Asn	Ser	Leu	Asp	Val	Thr	Asn	Tyr	Arg	Thr	Asp	Ala
			500					505					510		
Trp	Lys	Thr	Glu	Asn	Thr	Leu	Thr	Tyr	Asp	Asn	Ser	Phe	Gly	Asn	His
		515					520					525			
Thr	Val	Gly	Ala	Leu	Phe	Ser	Thr	Thr	Ala	Asp	His	Tyr	Asn	Val	Arg
	530					535					540				
Gly	Leu	Lys	Val	Asn	Gly	Lys	Asn	Phe	Ala	Asp	Glu	Ser	Pro	Tyr	Leu
545					550					555					560
Gln	Tyr	Leu	Ala	Tyr	Ala	Gly	Thr	Thr	Ser	Ala	Thr	Asp	Tyr	Leu	Thr
				565					570					575	
Gly	Pro	Asp	Ala	Asn	Val	Ser	Leu	Val	Ala	Arg	Leu	Ala	Tyr	Ser	Tyr
		580						585					590		
Asp	Asp	Arg	Tyr	Phe	Val	Thr	Ala	Ser	Trp	Arg	Arg	Asp	Tyr	Ala	Gly
	595						600					605			
Arg	Leu	Pro	Lys	Glu	Asn	Asn	Phe	Gly	Asp	Phe	Pro	Ala	Ala	Thr	Leu
610						615					620				
Ala	Trp	Lys	Ile	Ser	Asn	Glu	Lys	Phe	Phe	Lys	Lys	Ser	Asp	Phe	Ile
625					630					635					640
Gly	Met	Leu	Lys	Leu	Arg	Ala	Ser	Trp	Gly	Arg	Val	Gly	Asn	Leu	Gly
				645					650					655	
Ser	Ile	Asp	Tyr	Asn	Tyr	Lys	Ser	Leu	Leu	Leu	Gly	Thr	Ser	Tyr	Trp
		660						665					670		
Gln	Glu	Gln	Ala	Gln	Tyr	Gly	Val	Ile	Asn	Asn	Ala	Thr	Trp	Asn	Asn
		675					680					685			
Phe	Val	Tyr	Asn	Ser	Thr	Ala	Met	Asn	Arg	Asn	Leu	Thr	Trp	Glu	Thr
	690					695					700				
Ser	Glu	Gln	Trp	Asp	Leu	Gly	Leu	Asp	Val	Glu	Leu	Phe	Lys	Asn	Arg
705					710					715					720
Leu	Ala	Leu	Ser	Phe	Asp	Tyr	Phe	Asp	Lys	Arg	Thr	Phe	Asn	Leu	Ile
				725					730					735	
Gln	Lys	Gln	Thr	Met	Ile	Trp	Pro	Ser	Ser	Ile	Gly	Leu	Asp	Thr	Leu
			740					745					750		
Leu	Ile	Asn	Lys	Gly	Glu	Ile	Arg	Asn	Arg	Gly	Ile	Glu	Asn	Lys	Leu

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755 760 765
 Thr Gly Thr Asp Arg Val Asn Lys Ile Phe Pro Thr Ser Xaa Pro Gly
 770 775 780
 Ile Phe His Ile
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<210> 9796
 <211> 597
 <212> PRT
 <213> B.fragilis

<400> 9796
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 Leu Pro Tyr Phe Val Ser Phe Ala Ala Ala Trp Leu Phe Ile Ala Val
 20 25 30
 Ala Ser Ala Gln Glu Asn Pro Val Asp Tyr Val Asn Pro Phe Val Gly
 35 40 45
 Thr Thr Asn Tyr Gly Thr Thr Asn Pro Gly Ala Ile Cys Pro Gln Gly
 50 55 60
 Met Met Ser Val Val Pro Phe Asn Val Met Gly Asp Lys Ser Val Gly
 65 70 75 80
 Asn Lys Ile Asp Lys Asp Ser Gln Trp Trp Ser Thr Pro Tyr Glu His
 85 90 95
 Thr Asn Thr Tyr Phe Thr Gly Phe Ser His Val Asn Leu Ser Gly Val
 100 105 110
 Gly Cys Pro Glu Leu Gly Ser Leu Leu Leu Met Pro Thr Thr Gly Lys
 115 120 125
 Leu Asn Val Asp Tyr Leu Gln Tyr Gly Ser Ala Tyr Lys Asp Glu Lys
 130 135 140
 Ala Thr Pro Gly Tyr Tyr Ser Asn Val Leu Thr Lys Tyr Gly Ile Lys
 145 150 155 160
 Asn Glu Val Ser Ala Thr Leu Arg Thr Gly Ile Ser Arg Phe Thr Phe
 165 170 175
 Pro Lys Gly Glu Ser Asn Ile Leu Leu Asn Leu Gly Glu Gly Leu Thr
 180 185 190
 Asn Glu Thr Gly Ala Thr Val Arg Phe Val Ser Asp Thr Glu Ile Glu
 195 200 205
 Gly Ser Lys Leu Leu Gly Thr Phe Cys Tyr Asn Pro Gln Ala Val Phe
 210 215 220
 Pro Ile Tyr Phe Val Met Arg Ile Asn Lys Thr Pro Arg Ala Arg Gly
 225 230 235 240
 Tyr Trp Lys Lys Met Arg Pro Met Thr Val Glu Ala Gln Trp Asp Asn
 245 250 255
 Thr Ser Gly Lys Asn Lys Leu Tyr Thr Ala Tyr Thr Lys Glu Met Ser
 260 265 270
 Gly Asp Asp Ile Gly Thr Trp Phe Thr Phe Asp Thr Asp Glu Gly Glu
 275 280 285
 Thr Ile Glu Val Ser Met Gly Val Ser Phe Val Ser Ile Ala Asn Ala
 290 295 300
 Arg Leu Asn Leu Glu Lys Glu Gln Ala Gly Lys Gly Phe Asp Gln Ile
 305 310 315 320
 Arg Ala Glu Ala Arg Ala Met Trp Gln Asn Asp Leu Ser Arg Ile Leu
 325 330 335
 Val Glu Gly Gly Thr Glu Glu Gln Lys Arg Val Phe Tyr Thr Ala Met
 340 345 350
 Tyr His Leu Leu Ile His Pro Asn Ile Leu Gln Asp Val Asn Gly Gln
 355 360 365
 Tyr Pro Ala Met Glu Gly Ser Glu Ile Leu Thr Thr Lys Gly Asn Arg

370 375 380
 Tyr Thr Val Phe Ser Leu Trp Asp Thr Tyr Arg Asn Val His Gln Leu
 385 390 395 400
 Met Thr Leu Leu Phe Pro Asp Arg Gln Leu Asp Met Val Arg Thr Met
 405 410 415
 Val Asp Met Tyr Lys Glu His Gly Trp Leu Pro Lys Trp Glu Leu Tyr
 420 425 430
 Gly Arg Glu Thr Leu Thr Met Glu Gly Asp Pro Ser Ile Pro Val Ile
 435 440 445
 Ala Asp Thr Trp Met Lys Gly Leu Arg Asp Phe Asp Val Gln Ala Ala
 450 455 460
 Tyr Glu Ala Met Tyr Lys Ser Ala Thr Thr Pro Gly Lys Asp Asn Leu
 465 470 475 480
 Met Arg Pro Asp Ile Asp Asp Tyr Ile Ala Lys Gly Tyr Val Pro Leu
 485 490 495
 Thr Glu Gln Tyr Asp Asn Ser Val Ser Tyr Ala Leu Glu Tyr Tyr Ile
 500 505 510
 Ala Asp Tyr Ala Leu Ser Arg Phe Cys Pro Arg Arg Trp Glu Arg Lys
 515 520 525
 Lys Met Arg Ser Tyr Ser Thr Thr Val Arg Trp Asp Ile Asn Ile Thr
 530 535 540
 Thr Ala Arg Ser Ser Val His Tyr Val Pro Phe Tyr Pro Thr Glu His
 545 550 555 560
 Ser Ile Leu His Ser Ile Arg Trp Lys Glu Pro Ile Leu Leu Arg Val
 565 570 575
 Pro Val Phe Met Arg Gly Thr Pro Gly Ile Ile His Phe Met Phe Pro
 580 585 590
 Met Ile Leu Gln Ala
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<210> 9797

<211> 188

<212> PRT

<213> B.fragilis

<400> 9797

Ala Met Glu Gln Asn Glu Ile Gln Val Leu Val Glu Lys Ser Arg Arg
 1 5 10 15
 Gln Asp Ala Ser Ala Phe Ala Leu Leu Val Ala Glu Tyr Gln Thr Phe
 20 25 30
 Val Phe Arg Leu Ala Phe Arg Leu Leu Cys Asp Glu Glu Glu Ala Arg
 35 40 45
 Asp Met Val Gln Glu Thr Phe Leu Arg Val Trp Leu Ser Leu Asp Lys
 50 55 60
 Tyr Arg Pro Glu Phe Arg Phe Ser Thr Trp Leu Tyr Arg Val Ala Cys
 65 70 75 80
 Asn Ile Cys Tyr Asp Arg Leu Arg Ala Leu Gln His Ser Pro Ala Gly
 85 90 95
 Ala Leu Ser Asp Ile Thr Phe Ala Glu Leu Pro Val Cys Ser Asp Asp
 100 105 110
 Asn Ile Glu Ala Thr Leu Val Asn Arg Glu Leu Lys Ala His Ile Leu
 115 120 125
 Tyr Phe Met His Gln Val Thr Pro Lys Gln Lys Leu Val Phe Pro Leu
 130 135 140
 Arg Asp Ile Glu Glu Leu Glu Ile Lys Glu Ile Glu Lys Ile Thr Gly
 145 150 155 160
 Phe Thr Ser Val Gln Ile Lys Ala Asn Leu Tyr Leu Ala Arg Lys Ser
 165 170 175
 Ile Arg Lys Lys Leu Asn Glu Ile Asn Lys Glu Arg

180

185

<210> 9798
 <211> 359
 <212> PRT
 <213> B.fragilis

<400> 9798

Lys Gln Met His Met Lys Thr Asn Arg Leu Leu Ser Ile Leu Leu Leu
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 Ala Val Ser Met Val Ser Cys Thr Thr Tyr Tyr Gln Val Lys Thr Arg
 20 25 30
 Ile His Pro Asp Gly Ser Ala His Arg Glu Val Tyr Ala Phe Ala Asp
 35 40 45
 Ser Ala Phe Met Ala Gly Asp Pro Met Lys Asn Pro Phe Met Phe Ser
 50 55 60
 Leu Asp Ser Gly Trp Val Val Thr Arg Phe Asp Ser Val Arg Thr His
 65 70 75 80
 Asn Tyr Phe Gly Glu Glu Gly Lys Ile Asn Val Cys Ala Gly Arg Glu
 85 90 95
 Glu Pro Ser Val Ser Met Phe Ala Glu Gln Val His Pro Lys Asp Pro
 100 105 110
 Ile Tyr Arg Pro Leu Val Thr Pro Gln Glu Thr Leu Thr Lys His Phe
 115 120 125
 Arg Trp Phe Tyr Thr Tyr Tyr Thr Tyr Thr Gly Ile Tyr Pro Glu Leu
 130 135 140
 Ala Asp Lys Gly Pro Val Pro Leu Lys Asn Tyr Leu Asn Glu Ser Glu
 145 150 155 160
 Gln Lys Leu Trp Phe Gln Gly Asp Asp Thr Ala Tyr Arg Gly Met Asn
 165 170 175
 Gly Leu Glu Met Lys Glu Leu Leu Asp Arg Leu Glu Lys Lys Phe Tyr
 180 185 190
 Asp Trp Tyr Asn Arg Ser Leu Tyr Glu Leu Ser Phe Glu Val Ile Arg
 195 200 205
 Pro Phe Ile Ala Glu Ile Asp Arg Gly Lys Tyr Met Ser Arg Leu Asp
 210 215 220
 Glu Val Lys Asp Ser Leu Tyr Leu Gly Tyr Gln Pro Lys Asp Asp Asp
 225 230 235 240
 Pro Asp Pro Asp Pro Glu Leu Ile Cys Gln Leu Leu Asp Thr His Tyr
 245 250 255
 His Thr Asp Cys Phe Ser Leu Leu Tyr Lys Glu Lys Gln Gln Glu Val
 260 265 270
 Asp Lys Arg Phe Asp Glu Glu Thr Arg Pro Ile Glu Leu Phe Gly Ala
 275 280 285
 Val Ile Gln Tyr Glu Leu Lys Met Pro Gly Gln Met Ile Ser Ala Asn
 290 295 300
 Thr Thr Phe Arg Asp Arg Glu Tyr Leu Val Trp Lys Val Asp Ala Tyr
 305 310 315 320
 Arg Leu Leu Ala Gly Glu Tyr Ser Leu Thr Ala Arg Ser Arg Val Pro
 325 330 335
 Asn Val Trp Ala Phe Ile Leu Thr Gly Val Leu Ile Leu Leu Gly Ile
 340 345 350
 Gly Phe Trp Ile Lys Lys Arg
 355

<210> 9799
 <211> 839
 <212> PRT
 <213> B.fragilis

1. *What is the purpose of the study?*
 2. *What are the research objectives?*
 3. *What is the research design?*
 4. *What are the variables?*
 5. *What is the sample size?*
 6. *What are the data sources?*
 7. *What are the data collection methods?*
 8. *What are the data analysis methods?*
 9. *What are the results?*
 10. *What are the conclusions?*
 11. *What are the limitations?*
 12. *What are the recommendations?*

<223> Iden

Asn 1	Lys	Asn	Lys	Ser 5	Ile	Met	Asn	Lys	Lys 10	Ile	Lys	Ile	Ala 15	Phe	Ala
Ser	Met	Leu	Ala 20	Val	Pro	Leu	Leu	Ala 25	Cys	Ala	Gln	Val	Arg 30	Thr	Glu
Gln	Thr	Phe 35	Glu	Lys	Gly	Trp	Lys 40	Phe	Thr	Arg	Glu	Asp 45	Ser	Lys	Asp
Phe	Ser 50	Asn	Ser	Thr	Tyr	Asp 55	Asp	Ala	Lys	Trp	Gln 60	Ser	Val	Thr	Val
Pro 65	His	Asp	Xaa	Ala	Ile 70	Tyr	Gly	Pro	Phe	Ser	Ile 75	Asn	Asn	Asp	Lys 80
Gln	Asn	Val	Ala 85	Ile	Ser	Gln	Asp	Gly	Gln 90	Lys	Glu	Ala	Met 95	Glu	His
Ala	Gly	Arg	Thr 100	Gly	Gly	Leu	Pro	Phe 105	Val	Gly	Val	Gly	Trp 110	Tyr	Arg
Leu	Asn	Phe 115	Asp	Ala	Pro	Ser	Phe 120	Ser	Lys	Gly	Lys	Lys 125	Ala	Thr	Leu
Val	Phe 130	Asp	Gly	Ala	Met	Ser 135	His	Ala	His	Val	Tyr 140	Ile	Asn	Gly	Gln
Glu 145	Ala	Gly	Tyr	Trp	Pro 150	Tyr	Gly	Tyr	Asn	Ser	Phe 155	Tyr	Val	Asp	Ala 160
Thr	Pro	Tyr	Leu 165	Lys	Pro	Gly	Glu	Lys	Asn 170	Thr	Leu	Ala	Val	Arg	Leu 175
Glu	Asn	Glu	Asn 180	Glu	Ser	Ser	Arg	Trp 185	Tyr	Pro	Gly	Ala	Gly 190	Leu	Tyr
Arg	Asn	Val 195	His	Leu	Val	Val	Asn 200	Glu	Asp	Ala	His	Ile 205	Pro	Thr	Trp
Gly	Thr 210	Gln	Leu	Thr	Thr	Pro 215	Val	Val	Lys	Asp	Glu 220	Phe	Ala	Lys	Val
Asn 225	Leu	Lys	Thr	Lys	Leu	Asp 230	Val	Pro	Ala	Gly	Lys 235	Ala	Phe	Glu	Gly 240
Tyr	Arg	Ile	Val 245	Thr	Glu	Leu	Lys	Asp	Lys 250	Asp	Gly	Lys	Val	Val	Ala 255
Ala	Asn	Glu	Lys 260	Lys	Gly	Gly	Pro	Phe 265	Asp	Asp	Asn	Val	Phe	Glu	Gln
Asp	Phe 275	Val	Val	Thr	Ser	Pro	Ala 280	Leu	Trp	Thr	Pro	Asp 285	Thr	Pro	His
Leu	Tyr 290	Ser	Ala	Val	Ser	Lys 295	Val	Tyr	Glu	Gly	Asn 300	Thr	Leu	Lys	Asp
Glu 305	Tyr	Thr	Thr	Ser	Phe 310	Gly	Ile	Arg	Ser	Ile	Glu 315	Ile	Ile	Pro	Asn 320
Lys	Gly	Phe	Phe 325	Leu	Asn	Gly	Lys	Lys	Thr 330	Met	Phe	Lys	Gly	Val	Cys 335
Asn	His	His	Asp 340	Leu	Val	Pro	Leu	Val 345	Gly	Ile	Ala	Asn	Asp 350	Ala	Gly
Ile	Arg 355	Arg	Gln	Ile	Arg	Ile	Leu 360	Lys	Asp	Met	Gly	Cys 365	Asn	Ala	Ile
Arg	Thr 370	Ser	His	Asn	Met	Pro	Ala 375	Pro	Glu	Leu	Ile 380	Lys	Ala	Cys	Asp
Glu 385	Met	Gly	Met	Met	Ile 390	Met	Ala	Glu	Ser	Phe 395	Asp	Glu	Trp	Lys	Ala 400
Ala	Lys	Val	Gln 405	Asn	Gly	Tyr	His	Lys 410	Val	Phe	Asp	Glu	Trp	Val	Glu 415

Lys Asp Leu Val Asn Leu Ile His Gln Tyr Arg Asn Asn Pro Ser Val
 420 425 430
 Val Met Trp Cys Ile Gly Asn Glu Val Pro Asp Gln Trp Asn Gly Asp
 435 440 445
 Arg Gly Pro Lys Leu Ser Arg Phe Leu Gln Asp Ile Cys His Arg Glu
 450 455 460
 Asp Pro Thr Arg Pro Val Thr Gln Gly Met Asp Ala Pro Asp Ala Val
 465 470 475 480
 Val Asn Asn Asn Met Ala Ala Val Met Asp Val Ala Gly Phe Asn Tyr
 485 490 495
 Arg Pro His Lys Tyr Gln Glu Asn Tyr Lys Lys Leu Pro Gln Gln Ile
 500 505 510
 Ile Leu Gly Ser Glu Thr Ala Ser Thr Val Ser Ser Arg Gly Val Tyr
 515 520 525
 Lys Phe Pro Val Val Arg Arg Ala Met Gln Lys Tyr Asp Asp His Gln
 530 535 540
 Ser Ser Ser Tyr Asp Val Glu His Cys Gly Trp Ser Asn Leu Pro Glu
 545 550 555 560
 Asp Asp Phe Ile Gln His Glu Asp Leu Pro Tyr Cys Ile Gly Glu Phe
 565 570 575
 Val Trp Thr Gly Phe Asp Tyr Leu Gly Glu Pro Thr Pro Tyr Tyr Thr
 580 585 590
 Asp Trp Pro Ser His Ser Ser Leu Phe Gly Ile Ile Asp Leu Pro Gly
 595 600 605
 Leu Pro Lys Asp Arg Tyr Tyr Leu Tyr Arg Ser His Trp Asn Lys Asp
 610 615 620
 Lys Glu Thr Leu His Ile Leu Pro His Trp Asn Trp Glu Gly Arg Glu
 625 630 635 640
 Gly Glu Val Thr Pro Val Phe Val Tyr Thr Asn Tyr Pro Ser Ala Glu
 645 650 655
 Leu Phe Ile Asn Gly Lys Ser Gln Gly Lys Arg Thr Lys Asp Leu Ser
 660 665 670
 Val Thr Val Asn Asn Ser Gly Asp Ser Thr Ser Val Ala Asn Phe Lys
 675 680 685
 Arg Gln Gln Arg Tyr Arg Leu Met Trp Met Asp Thr Lys Tyr Glu Pro
 690 695 700
 Gly Thr Val Lys Val Val Ala Tyr Asp Lys Asp Gly Lys Ala Val Ala
 705 710 715 720
 Glu Lys Glu Ile His Thr Ala Gly Lys Pro Asp His Ile Glu Leu Val
 725 730 735
 Ala Asp Arg Ser Val Ile Asp Ala Asn Gly Lys Asp Leu Ser Phe Val
 740 745 750
 Thr Val Lys Val Val Asp Lys Glu Gly Asn Leu Cys Pro Leu Ala Asp
 755 760 765
 Asn Glu Ile Ser Phe Lys Val Lys Gly Ala Gly Thr Tyr Arg Ala Gly
 770 775 780
 Ala Asn Gly Asn Pro Ala Ser Leu Glu Ser Phe Gln Thr Pro Lys Met
 785 790 795 800
 Lys Val Phe Ser Gly Met Met Thr Ala Ile Val Gln Ser Thr Glu Lys
 805 810 815
 Ala Gly Lys Ile Thr Leu Glu Ala Thr Gly Lys Gly Leu Lys Lys Gly
 820 825 830
 Thr Leu Leu Ile Glu Ser Lys
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<210> 9800

<211> 292

<212> PRT

<213> B.fragilis

<400> 9800

Lys Pro Leu Asn Gly Tyr Ala Met Lys Leu Ser Ile Asp Leu Gly Gly
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 Thr Asn Val Arg Ile Ala Gln Val Glu Asn Gly Ile Cys Leu Asn Lys
 20 25 30
 Met Ser Val Pro Cys Leu Ala Gln Gln Asp Ala Ser Ala Val Leu Asp
 35 40 45
 Gln Leu Phe Gln Leu Ile Thr Gly Met Met Asn Val Gln Val Asp Gly
 50 55 60
 Ile Gly Ile Gly Val Pro Ser Ile Val Asp Val Glu Lys Gly Ile Val
 65 70 75 80
 Tyr Asn Val Ala Asn Ile Ser Ser Trp Lys Lys Ile His Leu Lys Asp
 85 90 95
 Ile Leu Glu Lys Arg Phe Met Val Pro Val Ala Ile Asn Asn Asp Ser
 100 105 110
 Asn Cys Phe Thr Leu Gly Glu Ser Met Phe Gly Glu Gly Lys Pro Tyr
 115 120 125
 Ala His Met Val Gly Val Thr Ile Gly Thr Gly Ile Gly Ala Gly Val
 130 135 140
 Ile Ile Asn His Arg Leu Tyr Cys Gly Gln Tyr Met Gly Ala Gly Glu
 145 150 155 160
 Ile Gly Ser Leu Pro Tyr Leu Asp Ser Asp Phe Glu His Tyr Cys Ser
 165 170 175
 Ser Ser Phe Phe Lys Arg His Asp Thr Thr Gly Val Val Val Ala Glu
 180 185 190
 Lys Ala Glu Arg Gly Asp Gly Ala Ala Leu Glu Ile Trp Arg Glu Phe
 195 200 205
 Gly Thr His Leu Gly Asn Leu Met Lys Val Ile Leu Phe Ser Tyr Ala
 210 215 220
 Pro Gln Ala Ile Ile Leu Gly Gly Ser Ile Val Ser Ala Phe His Phe
 225 230 235 240
 Phe Lys Asp Thr Met Lys Asp Ala Met Gln Asp Phe Pro Tyr Lys Ile
 245 250 255
 Leu Leu Asp Asn Val Lys Ile Ile Thr Ser Tyr Leu Lys Asp Ala Ser
 260 265 270
 Leu Leu Gly Ala Ser Ala Leu Phe Glu Lys Gln Tyr Leu Pro Ile Ser
 275 280 285
 Ile Ile Asn Asn
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<210> 9801

<211> 567

<212> PRT

<213> B.fragilis

<400> 9801

His Ile Pro Asp Ser Ser Leu Phe Thr Lys Asn Val Tyr Leu Cys His
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 20 25 30
 Thr Val Ser Asn Val Ser Val Gln Phe Gly Lys Arg Val Leu Phe Asn
 35 40 45
 Asp Val Asn Leu Lys Phe Thr Ser Gly Asn Cys Tyr Gly Ile Ile Gly
 50 55 60
 Ala Asn Gly Ala Gly Lys Ser Thr Phe Leu Arg Thr Ile Tyr Gly Asp
 65 70 75 80
 Leu Asp Pro Thr Thr Gly Asn Ile Thr Leu Gly Pro Gly Glu Arg Leu
 85 90 95

Ser Val Leu Ser Gln Asp His Phe Lys Trp Asp Ala Phe Thr Val Met
 100 105 110
 Asp Thr Val Met Met Gly His Thr Val Leu Trp Asp Ile Met Lys Gln
 115 120 125
 Arg Glu Ala Leu Tyr Ala Lys Glu Asp Phe Thr Asp Glu Asp Gly Leu
 130 135 140
 Lys Val Ser Glu Leu Lys Glu Lys Phe Ala Glu Leu Asp Gly Trp Asn
 145 150 155 160
 Ala Glu Ser Asp Ala Ala Met Leu Leu Ser Gly Leu Gly Val Lys Glu
 165 170 175
 Asp Lys His Tyr Thr Leu Met Gly Glu Leu Ser Gly Lys Glu Lys Val
 180 185 190
 Arg Val Met Leu Ala Gln Ala Leu Tyr Gly Asn Pro Asp Asn Met Leu
 195 200 205
 Leu Asp Glu Pro Thr Asn Asp Leu Asp Met Glu Thr Val Thr Trp Leu
 210 215 220
 Glu Glu Tyr Leu Ser Asn Phe Glu His Thr Val Leu Val Val Ser His
 225 230 235 240
 Asp Arg His Phe Leu Asp Ser Val Cys Thr His Thr Val Asp Ile Asp
 245 250 255
 Tyr Gly Lys Ile Asn Leu Phe Ala Gly Asn Tyr Ser Phe Trp Tyr Glu
 260 265 270
 Ser Ser Gln Leu Ala Leu Arg Gln Gln Gln Asn Gln Lys Ala Lys Ala
 275 280 285
 Glu Glu Lys Lys Lys Glu Leu Glu Glu Phe Ile Arg Arg Phe Ser Ala
 290 295 300
 Asn Val Ala Lys Ser Lys Gln Thr Thr Ser Arg Lys Lys Met Leu Glu
 305 310 315 320
 Lys Leu Asn Val Glu Glu Ile Lys Pro Ser Ser Arg Lys Tyr Pro Gly
 325 330 335
 Ile Ile Phe Thr Pro Glu Arg Glu Pro Gly Asn Gln Ile Leu Glu Val
 340 345 350
 Ser Gly Leu Ser Lys Lys Thr Glu Asp Gly Val Val Leu Phe Asn Asp
 355 360 365
 Val Asn Phe Asn Val Glu Lys Gly Asp Lys Ile Val Phe Ile Ser Arg
 370 375 380
 Asn Pro Arg Ala Met Thr Ala Phe Phe Glu Ile Ile Asn Gly His Met
 385 390 395 400
 Lys Pro Asp Ala Gly His Phe Asn Trp Gly Val Thr Ile Thr Thr Ala
 405 410 415
 Tyr Leu Pro Leu Asp Asn Thr Glu Tyr Phe Asn Thr Asp Leu Asn Leu
 420 425 430
 Val Asp Trp Leu Ser Gln Tyr Gly Glu Gly Asn Glu Val Tyr Met Lys
 435 440 445
 Gly Phe Leu Gly Arg Met Leu Phe Ser Gly Glu Glu Val Leu Lys Lys
 450 455 460
 Val Ser Val Leu Ser Gly Gly Glu Lys Met Arg Cys Met Ile Ala Arg
 465 470 475 480
 Met Gln Leu Arg Asn Ala Asn Cys Leu Ile Leu Asp Thr Pro Thr Asn
 485 490 495
 His Leu Asp Leu Glu Ser Ile Gln Ala Phe Asn Asn Asn Leu Lys Thr
 500 505 510
 Tyr Lys Gly Asn Ile Leu Phe Ser Ser His Asp His Glu Phe Ile Gln
 515 520 525
 Thr Val Ala Asn Arg Val Ile Glu Leu Thr Pro Asn Gly Ile Ile Asp
 530 535 540
 Lys Met Met Glu Tyr Asp Glu Tyr Ile Thr Ser Asp His Ile Lys Glu
 545 550 555 560
 Leu Arg Ala Lys Met Tyr Lys

565

<210> 9802
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 9802
 Gly Ser Asp Glu Phe Pro Leu Gly Ser Met Ala Lys Arg Phe Gly Glu
 1 5 10 15
 Leu Val Arg Gln Pro His Lys Val Val Lys Ser Glu Ala Val Val Phe
 20 25 30
 Arg Asn Tyr Ala Trp Asn Gly Glu Ala Lys Asp Arg Tyr Ile Gly Tyr
 35 40 45
 Gln Ala His Ala Val Glu Glu Phe Glu Gly Trp Val Phe Thr Asn Lys
 50 55 60
 Ile Val Val Glu
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<210> 9803
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 9803
 Asn Met Ala Glu Lys Arg Asp Tyr Tyr Glu Val Leu Glu Val Thr Lys
 1 5 10 15
 Glu Ser Thr Val Glu Glu Ile Lys Lys Ala Tyr Arg Lys Lys Ala Ile
 20 25 30
 Gln Tyr His Pro Asp Lys Asn Pro Gly Asp Lys Glu Ala Glu Glu Lys
 35 40 45
 Phe Lys Glu Ala Ala Glu Ala Tyr Asp Val Leu Ser Asn Pro Asp Lys
 50 55 60
 Arg Ala Arg Tyr Asp Gln Phe Gly His Ala Gly Met Ser Gly Ala Ala
 65 70 75 80
 Gly Asn Gly Gly Pro Phe Gly Gly Phe Ser Gly Gly Met Ser Met Asp
 85 90 95
 Asp Ile Phe Ser Met Phe Gly Asp Ile Phe Gly Gly His Ser Gly Gly
 100 105 110
 Gly Phe Gly Gly Gly Phe Gly Gly Phe Gly Gly Phe Gly Gly Gly
 115 120 125
 Ser Gln Gln Arg Lys Phe Arg Gly Ser Asp Leu Arg Val Lys Val Lys
 130 135 140
 Leu Asn Leu Lys Glu Ile Ser Thr Gly Val Glu Lys Lys Phe Lys Leu
 145 150 155 160
 Lys Lys Tyr Val Pro Cys Ser His Cys His Gly Thr Gly Ala Glu Gly
 165 170 175
 Asn Ser Gly Ser Glu Thr Cys Pro Thr Cys Lys Gly Ser Gly Ser Val
 180 185 190
 Ile Arg Asn Gln Gln Thr Ile Leu Gly Thr Met Gln Thr Arg Thr Thr
 195 200 205
 Cys Pro Thr Cys Asn Gly Glu Gly Lys Ile Ile Lys Asp Lys Cys Lys
 210 215 220
 Val Cys Gly Gly Glu Gly Ile Glu Tyr Gly Glu Glu Val Val Thr Val
 225 230 235 240
 Lys Ile Pro Ala Gly Val Ala Glu Gly Met Gln Leu Ser Met Gly Gly
 245 250 255
 Lys Gly Asn Ala Gly Lys His Asn Gly Ile Pro Gly Asp Leu Leu Ile
 260 265 270

Leu Val Glu Glu Glu Pro His Pro Glu Leu Ile Arg Asp Glu Asn Asp
 275 280 285
 Leu Val Tyr Asn Leu Leu Leu Ser Phe Pro Thr Ala Ala Ile Gly Gly
 290 295 300
 Ala Val Glu Ile Pro Thr Ile Asp Gly Lys Val Lys Val Lys Ile Glu
 305 310 315 320
 Ala Gly Thr Gln Pro Gly Lys Val Leu Arg Leu Arg Gly Lys Gly Leu
 325 330 335
 Pro Ser Val Asn Gly Tyr Gly Thr Gly Asp Leu Leu Val Asn Val Ser
 340 345 350
 Val Tyr Val Pro Glu Thr Leu Ser Lys Glu Glu Lys Ser Thr Leu Glu
 355 360 365
 Lys Leu Glu Glu Ser Lys Asn Phe Lys Pro Ser Thr Ser Ile Lys Glu
 370 375 380
 Lys Ile Phe Lys Lys Phe Arg Ser Leu Phe Asp
 385 390 395

<210> 9804

<211> 544

<212> PRT

<213> B.fragilis

<400> 9804

Val Met Lys Ser Arg Tyr Ile Cys Met Phe Ala Cys Leu Trp Gly Leu
 1 5 10 15
 Gly Phe Leu Phe Ser Cys Asp Gly Phe Leu Asn Glu Asn Pro Lys Asp
 20 25 30
 Lys Ile Pro Glu Glu Asp Ala Tyr Lys Asn Leu Thr Asp Leu Tyr Tyr
 35 40 45
 Asn Ala Val Ala Ser Leu Tyr Asn Asn Ile Gly Gly Tyr Ser Asp Ser
 50 55 60
 Gln Gly Leu Gln Gly Thr Gly Arg Gly Ile Tyr Asp Leu Asn Thr Phe
 65 70 75 80
 Thr Thr Asp Glu Ala Ile Met Pro Thr Arg Gly Gly Asp Trp Tyr Asp
 85 90 95
 Gly Gly Phe Trp Gln Gly Leu Phe Leu His Arg Trp Gly Val Asp Asn
 100 105 110
 Asp Ala Ile Gln Ala Thr Trp Glu Tyr Leu Tyr Lys Val Val Ser Leu
 115 120 125
 Cys Asn Gln Ser Leu Glu Arg Ile Asp Thr Tyr Gln Gln Thr His Asn
 130 135 140
 Asp Glu Glu Leu Pro Val Tyr Arg Ala Glu Val Arg Ala Phe Arg Ala
 145 150 155 160
 Leu Tyr Tyr Tyr His Leu Met Asp Leu Phe Ala Arg Val Pro Leu Val
 165 170 175
 Leu Ser Ser Ser Thr Pro Leu Lys Glu Val Lys Gln Asn Ser Arg Lys
 180 185 190
 Glu Val Phe Asp Phe Val Val Lys Glu Leu Gln Glu Ser Glu Pro Leu
 195 200 205
 Leu Glu Thr Ala Tyr Ser Asn Arg Ser Gly Asn Tyr Tyr Gly Arg Ile
 210 215 220
 Thr Arg Pro Val Ala Cys Phe Leu Leu Ala Lys Leu Ala Leu Asn Ala
 225 230 235 240
 Glu Ile Tyr Thr Asp Asn Asn Trp Thr Asp Gly Gln Phe Pro Asp Gly
 245 250 255
 Lys Asp Ile Tyr Phe Glu Val Asp Gly Glu Arg Leu Asn Ala Trp Gln
 260 265 270
 Thr Val Glu Ala Tyr Cys Asp Ala Ile Thr Ala Met Gly Tyr Arg Leu
 275 280 285

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Glu Asp Asn Tyr Glu Ala Asn Phe Ala Val Tyr Asn Glu Ser Ser Val
 290 295 300
 Glu Asn Ile Phe Thr Ile Pro Met Ser Lys Thr Leu Tyr Thr Asn Gln
 305 310 315 320
 Met Gln Tyr Leu Phe Arg Ser Arg His Tyr Asn His Ala Lys Ala Tyr
 325 330 335
 Gly Leu Gly Gly Glu Asn Gly Ser Ser Ala Thr Val Glu Val Leu Arg
 340 345 350
 Thr Phe Gly Tyr Asp Thr Glu Ala Val Asp Pro Arg Phe Asp Lys Cys
 355 360 365
 Tyr Phe Ala Gly Ile Val Tyr Asp Leu Lys Gly Lys Val Val Thr Leu
 370 375 380
 Asp Asp Gly Thr Gln Leu Glu Tyr Phe Pro Trp Lys Val Asp Val Asp
 385 390 395 400
 Ile Ser Asn Thr Pro Tyr Glu Lys Thr Ala Gly Ala Arg Met Lys Lys
 405 410 415
 Tyr Ala Ile Asp Glu Thr Ala Thr Lys Asp Gly Lys Leu Met Glu Asn
 420 425 430
 Asp Ile Val Leu Tyr Arg Tyr Ala Asp Val Leu Leu Met Lys Ser Glu
 435 440 445
 Ala Lys Val Arg Asn Gly Glu Asn Gly Asp Glu Glu Leu Asn Leu Val
 450 455 460
 Arg Ser Arg Val Asn Ala Pro Phe Arg Thr Ala Thr Leu Ala Asn Leu
 465 470 475 480
 Leu Ala Glu Arg Gln Leu Glu Phe Ala Trp Glu Gly Trp Arg Arg Gln
 485 490 495
 Asp Leu Ile Arg Phe Arg Gln Tyr Thr Arg Thr Tyr Thr Gly Arg Pro
 500 505 510
 Gln Leu Ser Gly Glu Lys Asn Gly Tyr Thr Thr Val Phe Pro Ile Pro
 515 520 525
 Glu Lys Val Arg Leu Met Asn Pro Asn Leu Thr Gln Asn Pro Gly Tyr
 530 535 540

<210> 9805

<211> 83

<212> PRT

<213> B.fragilis

<400> 9805

Phe Ile Gln Arg Val Pro Tyr Lys Met Leu Pro Gly Leu Thr Ser Pro
 1 5 10 15
 Asp Val Ala Arg Ala Ile Leu Tyr Leu Asn Lys Arg Thr Ile Tyr Leu
 20 25 30
 Ile Asn Arg Leu Phe Cys Tyr Asn Asp Gly Leu Ser Tyr Asp Leu Glu
 35 40 45
 Thr Ala Ala Ser Asn Phe Pro Ser Leu Leu Ala Gln Tyr Pro Gly Phe
 50 55 60
 Cys Val Arg Leu Gly Phe Ile Asn Arg Thr Phe Ser Gly Met Gly Asn
 65 70 75 80
 Thr Val Val

<210> 9806

<211> 841

<212> PRT

<213> B.fragilis

<400> 9806

Ala Ile Arg Gly Arg Val Pro Gly Leu Thr Ile Gln Lys Gly Thr Asn

1		5		10		15
Gly	Pro	Ala	Ala	Leu	Asp	Ala
		20			25	
Thr	Ser	Gly	Asn	Asp	Pro	Leu
		35			40	
Leu	Ser	Met	Leu	Thr	Ser	Ile
		50			55	
Ile	Leu	Lys	Asp	Ala	Ser	Glu
		65			70	
Ser	Gly	Val	Ile	Glu	Ile	Thr
			85			
Arg	Val	Ser	Tyr	Asn	Gly	Ser
			100			
Leu	Glu	Met	Leu	Ser	Gly	Asn
		115				
Gly	Val	Ala	Ile	Leu	Asp	Lys
		130				
Ile	Glu	Gln	Thr	Gly	Leu	Gln
		145				
Gly	Thr	Asp	Ala	Ser	Ser	Tyr
			165			
Gln	Gly	Ile	Ile	Leu	Asn	Glu
			180			
Asn	Met	Thr	Gln	His	Val	Phe
		195				
Met	Phe	Gly	Ser	Ile	Gln	Lys
		210				
Thr	Phe	Tyr	Ser	Ala	Ala	Thr
		225				
Asn	Pro	Glu	Thr	Asp	Ser	Trp
			245			
Thr	Asn	Pro	Leu	Ala	Trp	Met
			260			
His	Ile	Ser	Thr	His	Ala	Arg
		275				
Lys	Leu	Ile	Leu	Phe	Gly	Ser
		290				
Gln	Tyr	Leu	Pro	Thr	Ala	Val
		305				
Thr	Arg	Lys	Met	Glu	Ser	Leu
			325			
Lys	Lys	Trp	Asn	Lys	His	Tyr
			340			
Gln	Lys	Glu	Thr	Tyr	Ser	Gly
		355				
Thr	Asp	Gln	Phe	Gly	Tyr	Asn
		370				
Trp	Glu	Gly	Thr	Asn	Ser	Tyr
		385				
Leu	Gly	Arg	Phe	Asn	Tyr	Thr
			405			
Asn	Ala	Arg	Thr	Asp	Ala	Ser
			420			
Gly	Phe	Ser	Pro	Ser	Val	Ser
		435				
Phe	Met	Lys	Arg	Ile	Pro	Leu
		450				
Tyr	Gly	Leu	Ala	Gly	Asn	Gln
		465				

Asn Leu Val Lys Pro Asn Gly Val Val Pro Val Gly Ser Ser Gln Val
 485 490 495
 Val Thr Leu Gly Asn Met Arg Asn Thr Asn Pro Asp Leu Lys Trp Glu
 500 505 510
 Val Lys Arg Thr Phe Asn Ala Gly Val Asp Leu Gly Met Phe Gly Asn
 515 520 525
 Arg Leu Leu Phe Ser Leu Asn Tyr Tyr Asn Ser Lys Thr Ser Asp Met
 530 535 540
 Leu Tyr Leu Tyr Asn Val Ser Val Pro Pro Phe Thr Tyr Asn Thr Leu
 545 550 555 560
 Leu Ala Asn Ile Gly Ser Met Arg Asn Ser Gly Thr Glu Ile Ala Val
 565 570 575
 Gly Leu Thr Pro Leu Lys Thr Gln Asp Met Glu Leu Asn Val Asn Val
 580 585 590
 Asn Val Thr Phe Gln Gln Asn Lys Leu Leu Ser Leu Ser Gly Met Tyr
 595 600 605
 Gly Gly Glu Asn Ile Ser Ala Pro Glu Tyr Lys Ser Leu Ala Ser Leu
 610 615 620
 Asp Gly Ala Gly Phe His Gly Gly Tyr Asn His Ile Val Tyr Gln Met
 625 630 635 640
 Val Gly Gln Pro Leu Gly Val Phe Tyr Leu Pro His Cys Lys Gly Leu
 645 650 655
 Ile Ala Asp Gly Asn Gly Gly Tyr Thr Tyr Asp Ile Ala Asp Leu Asn
 660 665 670
 Gly Gly Gly Val Ser Leu Glu Asp Gly Glu Asp Arg Tyr Val Ala Gly
 675 680 685
 Gln Ala Val Pro Lys Thr Leu Leu Gly Ser Asn Ile Ser Phe Arg Tyr
 690 695 700
 Lys Arg Phe Asp Leu Ser Val Gln Val Asn Gly Ala Phe Gly His Lys
 705 710 715 720
 Ile Tyr Asn Gly Thr Ser Leu Thr Tyr Met Asn Met Asn Ile Phe Pro
 725 730 735
 Asp Tyr Asn Val Met Lys Lys Ala Pro Gly Arg Asn Ile Lys Asp Gln
 740 745 750
 Thr Ala Thr Asp Tyr Trp Leu Glu Lys Gly Asp Tyr Ile Asn Phe Asp
 755 760 765
 Tyr Val Thr Val Gly Trp Asn Val Pro Val Thr Lys Trp Lys Lys Tyr
 770 775 780
 Val Gln Ser Phe Arg Leu Ala Phe Thr Val Asn Asn Leu Ala Thr Ile
 785 790 795 800
 Thr Gly Tyr Ser Gly Leu Ser Pro Met Ile Asn Ser Ser Thr Val Asn
 805 810 815
 Ser Thr Leu Gly Val Asp Asp Lys Arg Ala Tyr Pro Leu Ala Arg Thr
 820 825 830
 Tyr Thr Leu Gly Leu Ser Ile Asn Phe
 835 840

<210> 9807

<211> 347

<212> PRT

<213> B.fragilis

<400> 9807

Ser Thr Met Gly Arg Lys Tyr Leu Gln Ser Phe Tyr Val Leu Ala Leu
 1 5 10 15
 Ile Ile Ser Ala Leu Phe Phe Pro Ala Phe Ser Gly Asp Asn Asn Ile
 20 25 30
 Lys Thr Ala Gly Ala Asn Met Ser Tyr Gly Asn Arg Leu Val Met Gln
 35 40 45

Thr Gly His Lys Ser Ala Asn Leu Val Ser Gly Val Glu Lys Val Glu
 50 55 60
 Trp Met Lys Val Leu Gln Asp Thr Leu Pro Val Cys Lys Ile Ser Ile
 65 70 75 80
 Pro Gly Thr His Asp Ser Gly Ser Thr Lys Gly Gly Cys Met Leu Lys
 85 90 95
 Thr Gln Thr Ala Asp Ile Pro Ala Gln Leu Gln Lys Gly Ile Arg Ala
 100 105 110
 Phe Asp Ile Arg Leu Lys Glu Lys Asn Gly Lys Leu Gly Val Phe His
 115 120 125
 Ser His Ala Phe Gln Asp Ile Tyr Trp Glu Glu Asp Val Leu Leu Ala
 130 135 140
 Phe Ile Ser Phe Leu Gln Ala His Pro Ser Glu Thr Leu Ile Val Ser
 145 150 155 160
 Leu Lys Lys Glu Gly Gly Glu Ile Lys Asp Tyr Ala Ser Leu Leu Ser
 165 170 175
 Ala Ser Leu Asn Thr Pro Ala Tyr Gln Arg Tyr Phe Ile Ala Asp Phe
 180 185 190
 His Pro Glu Leu Thr Leu Lys Ser Cys Arg Gly Lys Ile Leu Phe Leu
 195 200 205
 His Arg Asp His Ala Met Asp Asn Tyr Pro Gly Ala Ala Cys Ile Gly
 210 215 220
 Trp Asp Asp Asn Thr Thr Cys Leu Leu Thr Leu Arg Asn Lys Asp Gly
 225 230 235 240
 Lys Glu Ala Thr Val Phe Leu Gln Asp Glu Tyr Gln Tyr Asn Ser Gly
 245 250 255
 Lys Glu Ala Gly Lys Lys Ile Ala Ala Cys Ile Arg Asn Phe Asp Arg
 260 265 270
 Ile Cys Glu Glu Gln Thr Phe Ser Arg Arg Trp Gly Ile Ser Phe Val
 275 280 285
 Ser Ala Thr Gly Leu His Ser Gly Ile Pro Leu Val Phe Ala Asn Lys
 290 295 300
 Val Asn Lys Pro Val Ala Asp Tyr Leu Lys Glu Asn Arg Lys Arg Asn
 305 310 315 320
 Cys Gly Ile Val Phe Ile Asp Phe Ile Glu Ser Ser Gly Gly Gln Lys
 325 330 335
 Leu Val Glu Tyr Leu Ile Gly Gly Asn Ile Tyr
 340 345

<210> 9808

<211> 85

<212> PRT

<213> B.fragilis

<400> 9808

Leu Met Glu Gly His Leu Val Leu Lys Val Arg Trp Phe Val Pro Tyr
 1 5 10 15
 Trp Gln His Phe Leu His Tyr Ser Leu Ser Gly Gly Ser Asn Ile His
 20 25 30
 His Arg Gly Cys Gly Gly Ile Lys Val Ile Ala Trp Ile Leu Phe Phe
 35 40 45
 Phe Arg Ile Trp Lys Tyr Glu Met Thr Ile Val Lys Phe Gln Leu Ser
 50 55 60
 Val Leu Tyr Gly Leu Ala Ser Ala Asn Asp Ile Leu Lys Glu Leu Leu
 65 70 75 80
 His Ile Cys Ala Lys
 85

<210> 9809

<211> 353
 <212> PRT
 <213> B.fragilis

<400> 9809

Thr Phe Ile Ile Asn Met Lys Ile Lys His Leu Phe Ile Gly Ile Ala
 1 5 10 15
 Leu Thr Ala Asn Leu Phe Ala Ala Thr Ala Gln Glu Val Lys Lys Thr
 20 25 30
 Tyr Phe Val Ser Lys Pro Gly Thr Leu Ile Ser Met Met Thr Glu Glu
 35 40 45
 Glu Ala Asn Gln Val Thr His Leu Thr Leu Thr Gly Lys Ile Asn Ala
 50 55 60
 Val Asp Phe Arg His Leu Arg Asp Glu Phe Lys Asn Leu Gln Val Leu
 65 70 75 80
 Asp Ile Ala Asn Ala Ser Ile Ser Met Tyr Ser Gly Lys Glu Gly Thr
 85 90 95
 Tyr Pro Asp Lys Phe Tyr Ile Tyr Met Pro Asn Phe Val Pro Ala Tyr
 100 105 110
 Ala Phe Cys Lys Met Glu Asn Gly Thr Ala Lys Gly Lys Ser Thr Leu
 115 120 125
 Lys Lys Ile Ile Leu Ser Glu Lys Ile Lys Asn Ile Glu Asp Ala Ala
 130 135 140
 Phe Met Gly Cys Glu Asn Leu Asn Ile Cys Gln Ile Lys Lys Lys Thr
 145 150 155 160
 Pro Pro Asn Leu Leu Pro Glu Ala Leu Ala Asp Ser Ile Thr Ala Ile
 165 170 175
 Phe Val Pro Leu Gly Ala Ser Asp Glu Tyr Arg Leu Lys Asn Arg Trp
 180 185 190
 Asp Asn Phe Ala Phe Ile Glu Gly Glu Pro Leu Glu Ala Lys Ile Glu
 195 200 205
 Val Gly Ala Leu Ser Thr Leu Glu Asn Glu Ile Gln Lys Ala Gly Leu
 210 215 220
 Gln Pro Lys Glu Ile Asn Phe Leu Thr Ile Glu Gly Lys Leu Asp Ala
 225 230 235 240
 Ala Asp Phe Lys Leu Ile Arg Asp Tyr Met Pro Asn Leu Val Ala Val
 245 250 255
 Asp Ile Glu Lys Thr Asn Ala Thr Ala Ile Pro Asp Phe Thr Phe Ser
 260 265 270
 Gln Lys Lys Tyr Leu Leu Arg Ile Arg Leu Pro His Gly Leu Lys Ser
 275 280 285
 Ile Gly Gln Arg Ala Phe Ser Asn Cys Gly Arg Leu Cys Gly Thr Val
 290 295 300
 Glu Leu Pro Glu Ser Ile Thr Ala Ile Glu Tyr Gly Ala Phe Met Gly
 305 310 315 320
 Cys Asp Arg Leu Arg Tyr Val Val Ala His Gly Asp Lys Ile Thr Thr
 325 330 335
 Ile Gly Asp Asn Leu Phe Gly Glu Gly Lys Asn Lys Leu Ile Tyr Lys
 340 345 350
 Arg

<210> 9810
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 9810

Ile Asn Lys Met Glu Gln Gln Asp His Glu Ser Phe Phe Ser Pro Lys

1		5		10		15
Gly	Ile	Pro	Ala	Phe	Ala	Ser
		20			25	
Ile	Val	Met	Ser	Leu	Phe	His
		35			40	
Arg	Gly	Tyr	Gly	Met	Gly	Tyr
	50				55	
Leu	Ser	Val	Phe	Ile	Val	Thr
65				70		
Arg	Pro	Phe	Ser	Asp	Leu	Gly
			85			
Ile	Leu	Tyr	Gly	Phe	Leu	Val
		100			105	
Gly	Val	Cys	Leu	Leu	Thr	Gly
		115			120	
His	Trp	Ser	Asp	Leu	Leu	Leu
	130				135	
Ile	Val	Glu	Glu	Thr	Met	Met
145				150		
Arg	Thr	Arg	Leu	Asn	Lys	Phe
			165			
Phe	Ala	Leu	Leu	His	Leu	Met
		180				
Leu	Asn	Leu	Val	Leu	Gly	Gly
	195				200	
Thr	Arg	Asn	Leu	Trp	Phe	Pro
	210				215	
Ile	Gln	Gly	Pro	Val	Leu	Gly
225				230		
Glu	Thr	Leu	Phe	Ser	Leu	Arg
			245			
Gly	Ala	Phe	Gly	Phe	Glu	Gly
		260			265	
Leu	Phe	Thr	Leu	Phe	Ile	Ile
	275				280	
Met	Arg	Arg	Tyr			
	290					

<210> 9811

<211> 261

<212> PRT

<213> B.fragilis

<400> 9811

Phe	Cys	Ile	Val	Cys	Thr	Gly	Ile	Leu	Tyr	Ser	Arg	Leu	Cys	Ala	Leu
1				5				10					15		
Thr	Phe	Leu	Pro	Gln	Ala	Leu	Gly	Lys	Lys	Glu	Asp	Ala	Lys	Leu	Phe
		20					25					30			
Tyr	Asp	Arg	Ser	Leu	Gly	Tyr	Lys	His	Tyr	Tyr	Cys	Lys	Glu	Phe	Gly
	35					40					45				
Thr	Leu	Arg	Pro	Ile	Leu	Pro	Asp	Gly	Thr	Phe	Tyr	Ser	Pro	Phe	Asp
	50					55					60				
Pro	Met	Glu	Gly	Ala	Asn	Phe	Ala	Pro	Ser	Pro	Gly	Phe	His	Glu	Gly
65				70					75					80	
Asn	Ser	Trp	Asn	Tyr	Thr	Phe	Tyr	Val	Pro	His	Asp	Ile	Ala	Gly	Leu
			85						90					95	
Thr	Arg	Leu	Met	Gly	Gly	Lys	Lys	Lys	Phe	Val	Asp	Lys	Leu	Gln	Lys
		100					105					110			
Val	Phe	Asp	Glu	Gly	Leu	Tyr	Asp	Pro	Ala	Asn	Glu	Pro	Asp	Ile	Ala

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 9812

Thr 1	Phe	Leu	Val	Asn 5	Asn	Glu	Leu	Ser	Gly 10	Met	Cys	Gln	Ser	Asp 15	Ile
Lys	Val	Leu	Pro 20	Leu	Leu	Arg	Phe	Leu 25	Ala	Lys	Gln	Thr	Asn 30	Trp	Gln
Ser	Phe	Cys 35	Cys	Lys	Ala	Ser	Thr 40	Ser	Lys	Cys	Arg	Ile 45	Asp	Met	Lys
Leu	Asn 50	Pro	Phe	Asn	Lys	Asn 55	Lys	Asn	Arg	Ile	Asp 60	Met	Asp	Pro	Lys
Glu 65	Lys	Lys	Thr	Lys 70	Gln	Glu	Glu	Glu	Leu	Lys 75	Val	Asp	Asp	Ile	Gln 80
Asp	Thr	Val	Glu	Gly 85	Gln	Ser	Gln	Asn 90	Glu	Glu	Ala	Thr	Glu	Ala 95	Thr
Glu	Pro	Leu 100	Thr	Ala	Glu	Glu	Lys 105	Leu	Glu	Lys	Glu	Leu 110	Lys	Glu	Ala
Gln	Ala	Gln 115	Ile	Glu	Asp	Gln	Lys 120	Asp	Lys	Tyr	Leu	Arg 125	Leu	Ser	Ala
Glu	Phe 130	Asp	Asn	Tyr	Arg	Lys 135	Arg	Thr	Val	Lys	Glu 140	Lys	Ala	Glu	Leu
Ile 145	Leu	Asn	Gly	Gly 150	Glu	Lys	Ser	Ile	Lys	Ser 155	Ile	Leu	Pro	Val	Ile 160
Asp	Asp	Met	Glu	Arg 165	Ala	Leu	Thr	Thr	Met 170	Glu	Thr	Ala	Thr	Asp 175	Val
Asn	Ala	Val 180	Lys	Glu	Gly	Val	Glu 185	Leu	Ile	Tyr	Asn	Lys 190	Phe	Leu	Ser
Ile	Leu	Ser 195	Gln	Asp	Gly	Val 200	Lys	Val	Ile	Glu	Thr 205	Lys	Asp	Gln	Pro
Leu	Asp 210	Thr	Asp	Tyr	His	Glu 215	Ala	Ile	Ala	Val	Ile 220	Pro	Ala	Pro	Thr
Glu 225	Glu	Gln	Lys	Gly 230	Lys	Ile	Leu	Asp	Cys	Val 235	Gln	Thr	Gly	Tyr	Thr 240
Leu	Asn	Gly	Lys	Val 245	Ile	Arg	His	Ala 250	Lys	Val	Val	Val	Gly	Glu 255	

<210> 9813
 <211> 297
 <212> PRT
 <213> B.fragilis

<400> 9813

His	Ile	Cys	Ser	Phe	His	Ala	Ile	Asn	Arg	Phe	Leu	Ser	Ser	Val	Ile
1				5					10					15	
Lys	Tyr	Pro	Gln	Ile	Leu	Ser	Ser	Leu	Ser	Leu	Ile	Tyr	Ile	Tyr	Val
			20					25					30		
His	Pro	Lys	Asn	Glu	Met	Glu	Arg	Glu	Phe	Asn	Asn	Asp	Met	Leu	Asn
			35					40					45		
Arg	Ala	Glu	Ala	Ile	Arg	Cys	Ile	Arg	Val	Gln	Ser	Leu	Ile	Asn	Lys
	50					55					60				
Lys	Phe	Asp	Phe	Leu	Asp	Lys	His	Lys	Met	Lys	Ala	Asp	Phe	Ile	Asp
65					70					75					80
Tyr	Phe	Ala	Lys	Met	Met	Gln	Ile	Lys	Asp	Gln	Lys	Trp	Lys	Met	Val
				85					90					95	
Tyr	Ala	His	Phe	Ser	Asn	Phe	Val	Gln	Gly	Lys	Cys	Asn	Phe	Gly	Glu
			100					105					110		
Val	Asn	Val	Asp	Leu	Cys	Lys	Arg	Phe	Arg	Ala	Tyr	Leu	Leu	Asn	Ala
			115					120					125		
Lys	Gln	Leu	Lys	His	Thr	Thr	Arg	Lys	Val	Ser	Leu	Asn	Ser	Ala	Ala
	130						135					140			
Gly	Tyr	Tyr	Ser	Thr	Phe	Arg	Gly	Leu	Ser	Lys	Ile	Ala	Tyr	Arg	Asp
145					150					155					160
Lys	Leu	Leu	Arg	Glu	Asn	Ile	Asn	Asp	Phe	Leu	Glu	Lys	Ile	Glu	Tyr
				165					170					175	
Glu	Asp	Val	Lys	Lys	Glu	Tyr	Leu	Thr	Leu	Asp	Glu	Val	Lys	Gln	Leu
			180					185					190		
Ala	Ala	Thr	Pro	Cys	Asp	Ile	Pro	Val	Leu	Lys	Ala	Val	Ser	Leu	Phe
			195					200					205		
Ser	Cys	Leu	Thr	Gly	Phe	Arg	Ile	Ser	Asp	Ile	Met	Asn	Leu	Gln	Trp
	210					215					220				
Ser	Asp	Phe	Gly	Ile	Ala	Pro	Asp	Gln	Gly	Tyr	Cys	Ile	Arg	Ile	Arg
225					230					235					240
Thr	Gln	Lys	Thr	Lys	Thr	Gly	Ala	Thr	Leu	Pro	Ile	Ser	His	Glu	Ala
				245					250					255	
Phe	Glu	Leu	Cys	Gly	Glu	Val	Gly	Thr	Gly	Lys	Val	Phe	Lys	Gly	Leu
			260					265					270		
Gly	Arg	Ser	Met	Ile	Asn	Tyr	Pro	Leu	Lys	Asn	Trp	Leu	Lys	Gln	Thr
		275					280					285			
Lys	Ile	Leu	Lys	His	Ile	Ile	Phe	His							
	290					295									

<210> 9814
 <211> 573
 <212> PRT
 <213> B.fragilis

<400> 9814

Val	Arg	Leu	Ser	Ile	Gly	Leu	His	Thr	Lys	Ser	Cys	Tyr	Lys	Thr	Ser
1				5					10					15	
Ala	Cys	Asp	Gly	Leu	Phe	Ser	Phe	Glu	Pro	Ile	Leu	Thr	Leu	Arg	Leu
			20					25					30		
Lys	Pro	Ser	Tyr	Leu	Leu	Val	Val	Val	His	Cys	Asn	Gly	Ile	Thr	Asp
			35					40					45		
Arg	Asp	Met	Phe	Gly	Lys	Ser	Asp	Asp	Leu	Lys	Asp	Met	Arg	Lys	Trp
	50					55					60				

Arg	Val	Trp	Lys	Leu	Lys	Leu	Ile	Asp	Ala	Arg	Leu	Tyr	Phe	Val	Ser
65					70					75					80
Ile	Phe	Val	Gly	Leu	Leu	Thr	Gly	Leu	Val	Ala	Val	Pro	Tyr	His	Tyr
				85						90				95	
Leu	Leu	Gln	Leu	Phe	Phe	Asn	Thr	Arg	Arg	Asp	Phe	Phe	Asp	Ser	His
			100					105					110		
Pro	His	Trp	Tyr	Trp	His	Ile	Pro	Ile	Phe	Leu	Ser	Leu	Trp	Gly	Ile
		115					120					125			
Leu	Leu	Phe	Val	Met	Trp	Leu	Val	Lys	Lys	Met	Pro	Leu	Ile	Thr	Gly
	130					135					140				
Gly	Gly	Ile	Pro	Gln	Thr	Arg	Gly	Val	Ile	Asn	Gly	Arg	Ile	Ser	Tyr
145					150					155					160
Lys	His	Pro	Phe	Ile	Glu	Leu	Val	Ser	Lys	Phe	Val	Gly	Gly	Val	Leu
				165					170					175	
Ala	Leu	Ser	Ala	Gly	Leu	Ser	Leu	Gly	Arg	Glu	Gly	Pro	Ser	Val	Gln
			180					185					190		
Ile	Gly	Ser	Tyr	Val	Gly	Cys	Leu	Val	Ser	Lys	Trp	Gly	Arg	Val	Leu
	195						200					205			
Ala	Gly	Glu	Arg	Lys	Gln	Leu	Leu	Ala	Ala	Gly	Ala	Gly	Ala	Gly	Leu
	210					215					220				
Ala	Ala	Ala	Phe	Ala	Ala	Pro	Leu	Ala	Ser	Ser	Leu	Leu	Val	Ile	Glu
225					230					235					240
Ser	Ile	Glu	Arg	Phe	Asp	Ala	Pro	Lys	Thr	Ala	Ile	Thr	Thr	Leu	Leu
				245				250						255	
Ala	Gly	Val	Val	Ala	Gly	Gly	Val	Ala	Ser	Met	Ile	Phe	Pro	Ile	Asn
			260					265					270		
Pro	Tyr	Phe	Gln	Ile	Asp	Ala	Ile	Ser	Pro	Gly	Leu	Thr	Phe	Phe	Ser
		275					280					285			
Gln	Val	Lys	Leu	Phe	Leu	Leu	Leu	Ala	Ala	Val	Ile	Ser	Val	Ser	Gly
	290					295					300				
Lys	Ile	Tyr	Ser	Val	Ile	Thr	Val	Trp	Phe	Lys	Arg	Leu	Tyr	Pro	Ala
305					310					315					320
Ile	Lys	His	Pro	Ala	Tyr	Val	Lys	Met	Leu	Tyr	Leu	Leu	Phe	Ile	Ala
				325				330						335	
Tyr	Leu	Ile	Ser	Leu	Thr	Glu	Val	Asn	Leu	Thr	Gly	Gly	Gly	Glu	Gln
			340					345					350		
Phe	Leu	Leu	Gly	Gln	Ala	Met	His	Ala	Asp	Thr	His	Ile	Met	Trp	Ile
	355						360					365			
Val	Gly	Met	Met	Ile	Leu	His	Phe	Val	Phe	Ser	Val	Leu	Ser	Phe	Ser
	370					375					380				
Ser	Gly	Leu	Pro	Gly	Gly	Ser	Phe	Ile	Pro	Thr	Leu	Val	Thr	Gly	Gly
385					390					395					400
Leu	Ile	Gly	Gln	Ile	Val	Ala	Leu	Ile	Leu	Val	Arg	Gln	Gly	Ile	Ile
				405					410					415	
Gly	Tyr	Glu	Asn	Ile	Ser	Tyr	Val	Met	Leu	Ile	Cys	Met	Ser	Ala	Phe
			420					425					430		
Leu	Val	Ala	Val	Ile	Arg	Thr	Pro	Leu	Thr	Ala	Ile	Val	Leu	Ile	Thr
		435					440					445			
Glu	Ile	Thr	Gly	His	Leu	Glu	Val	Phe	Tyr	Pro	Ser	Ile	Val	Val	Gly
	450					455					460				
Gly	Leu	Thr	Tyr	Tyr	Phe	Thr	Glu	Met	Leu	Gln	Ile	Gln	Pro	Phe	Asn
465					470					475					480
Val	Thr	Leu	Tyr	Asp	Met	Ile	Asn	Ser	Pro	Glu	Phe	Gln	Glu	Glu	
				485				490					495		
Lys	Arg	Tyr	Thr	Leu	Ser	Val	Glu	Val	Met	Ser	Gly	Ser	Tyr	Phe	Asp
			500					505					510		
Gly	Lys	Thr	Val	Asn	Glu	Ile	Gln	Leu	Pro	Glu	Arg	Cys	Glu	Ile	Ile
		515					520					525			
Asn	Ile	His	Arg	Asp	Arg	Lys	Asp	Ile	Pro	Pro	Ala	Lys	Gln	Lys	Leu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

530 535 540
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545 550 555 560
Lys Leu Tyr Glu Pro Leu Val Ser Met Ala Asn Ile Tyr
565 570

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<400> 9815
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Ala Gly Arg Ser Glu Phe Leu Leu Ile Arg Ser Arg Leu Cys Arg Ile
20 25 30
Thr His Val Asn Ser Ile Gly Arg Ile Leu Lys Tyr Phe His Arg Tyr
35 40 45
Met Glu Ile Ile Phe Asp Phe Asn Phe Ile Val Ser
50 55 60

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<211> 80
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Asp Ile Leu Phe Lys Tyr Leu Asn Leu Leu Tyr Thr Lys Val Tyr Met
20 25 30
Asn Ile Leu Gly Val Asn Gln Val Ser Leu Phe Phe Thr Tyr Ala Ser
35 40 45
Ile Thr Leu Leu Phe Leu Gly Val Phe Ser Ile Ala Asp Thr Leu Arg
50 55 60
Val Arg Ala Leu Lys Ile Asn Ala Thr Gly Lys Thr Val Phe Gln Asn
65 70 75 80

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<213> B.fragilis

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Glu Gln Lys Ile Leu Ser Leu Leu Asp Gln Phe Lys Gly Leu Gly Ile
20 25 30
Asp Gln Gln Ile Asp Tyr Asn Lys Phe Tyr Leu Tyr Ser Ile Ile Thr
35 40 45
His Ser Thr Ala Ile Glu Gly Ser Thr Val Thr Glu Ile Glu Asn Gln
50 55 60
Leu Leu Phe Asp Glu Gly Ile Ser Ala Lys Gly Arg Ser Met Thr Glu
65 70 75 80
Gln Leu Met Asn Leu Asp Leu Lys Ala Ala Tyr Glu Gln Ser Ile Val
85 90 95
Phe Ala Lys Ser His Ser Asp Ile Ser Val Asp Met Leu Lys Lys Leu
100 105 110
Ser Ser Ile Val Leu Lys Asn Thr Gly Thr Ile Tyr Asn Thr Pro Leu

[illegible]

<400> 9819															
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1				5					10					15	
Arg	Leu	Tyr	Ser	Ser	Ile	Ser	Tyr	Phe	Val	Lys	Leu	Thr	Ile	Glu	Ala
			20					25					30		
Thr	Ile	Ala	Ala	Ile	Glu	Ala	Met	Glu	Leu	Leu	Met	Pro	Thr	Ala	Pro
		35					40					45			
Ala	Val	Val	Ile	Phe	Phe	Arg	Ser	Pro	Leu	Leu	Gly	Thr	Ile	Ile	Ser
	50					55					60				
His	Pro	Gly	Ser	Met	Ala	Phe	Ala	Val	Phe	Leu	Leu	Asn	Arg	Glu	Thr
65					70					75					80

[illegible]

Val 1	Cys	Ala	Thr	Gln 5	Leu	Ile	Cys	Asn	Pro 10	Met	Lys	Ile	Tyr	His 15	Lys
Phe	Phe	Leu	Tyr 20	Gln	Asn	Lys	Leu	Leu	Gln	Pro	Tyr	Val	Arg	Leu	Leu
Leu	Arg	Leu	Met 35	Ala	Ile	Ile	Thr	Tyr	Leu	Ala	Ser	Ile	Met	Leu	Ile
Val	Gly 50	Val	Ile	Tyr	Glu	His 55	Gly	Phe	Thr	Leu	Ser 60	Ala	His	Glu	Val
Thr 65	Lys	Ile	His	Leu	Leu	Tyr 70	Lys	Thr	Val	Trp 75	Ile	Ile	Phe	Leu	Ile
Asp	Val	Thr	Leu 85	His	Ile	Leu	Leu	Glu	Tyr 90	Arg	Asp	Thr	Lys	Lys	Asn
Phe	Arg	Lys	Leu 100	Ala	Trp	Ile	Leu	Ser	Trp 105	Leu	Leu	Tyr	Leu	Thr	Leu
Ile	Pro	Val 115	Ile	Phe	His	Arg	Pro	Glu	Glu	Gly	Gly	Ala	Ile	Leu	His
Leu	Trp 130	Glu	Phe	Leu	His	Gly 135	Tyr	Phe	Tyr	His	Ile	Val	Leu	Leu	Leu
Leu 145	Phe	Ser	Leu	Leu	Asn 150	Leu	Ser	Asn	Gly	Leu	Val	Arg	Leu	Leu	Gly
Arg	Arg	Thr	Asn 165	Pro	Ser	Leu	Ile	Leu	Ala	Ser	Phe	Leu	Val	Ile	Ile
Ile	Leu	Ile	Gly 180	Ala	Gly	Leu	Leu	Met	Leu 185	Pro	Arg	Cys	Thr	Val	Asp
Gly	Val	Thr 195	Leu	Ser	Trp	Val	Asp 200	Ala	Leu	Phe	Thr	Ser	Thr	Ser	Ala
Val	Cys 210	Val	Thr	Gly	Leu	Val 215	Pro	Val	Asp	Val	Ser	Ala	Thr	Phe	Thr
Pro 225	Ala	Gly	Leu	Thr	Val 230	Ile	Ile	Leu	Leu	Ile	Gln	Ile	Gly	Gly	Leu
Gly	Val	Met	Thr 245	Leu	Thr	Ser	Phe	Phe	Ala	Met	Phe	Phe	Met	Gly	Asn
Thr	Ser	Leu	Tyr 260	Asn	Gln	Leu	Val	Val	Arg 265	Asp	Met	Val	Ser	Ser	Asn
Ser	Leu	Gly 275	Ser	Leu	Leu	Ser	Thr	Leu	Leu	Tyr	Ile	Leu	Gly	Phe	Thr
Leu	Val 290	Ile	Glu	Gly	Val	Gly 295	Met	Leu	Ser	Ile	Trp	Phe	Ser	Ile	His
Gly 305	Thr	Leu	Gly	Met	Asp 310	Val	Gln	Asp	Glu	Leu	Ala	Phe	Ser	Ala	Phe
His	Ser	Ile	Ser 325	Ala	Phe	Cys	Asn	Ala	Gly	Phe	Ser	Thr	Leu	Pro	Gly
Asn	Leu	Gly	Asn 340	Pro	Met	Val	Met	Thr	Asn 345	His	Asn	Trp	Leu	Tyr	Ile
Thr	Val	Ser 355	Leu	Leu	Ile	Ile	Phe	Gly	Gly	Ile	Gly	Phe	Pro	Ile	Leu
Val	Asn 370	Phe	Lys	Asp	Ile	Ile 375	Val	Tyr	His	Ala	Arg	Arg	Phe	Trp	Arg
Leu 385	Ile	Arg	Thr	Arg	Gln 390	Trp	Asp	Asn	His	Arg 395	Val	His	His	Leu	Phe

[illegible]

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<213> B.fragilis
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<400> 9822

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 Pro Tyr Tyr Leu Asp Gly Ile Phe Lys Tyr Phe Val Val Cys Ser Thr
 20 25 30
 Ala Leu Leu Leu Asp Phe Arg Arg Ser Asp Glu Ser Ile Pro Ile Phe
 35 40 45
 Ser Tyr Val His Ile Lys Arg Tyr Leu Ser Asn Val Leu Gln Asp Val
 50 55 60
 Glu Ser Val Val Leu Phe Tyr Gly Asn Asn Tyr Ile
 65 70 75

<210> 9823

<211> 68

<212> PRT

<213> B.fragilis

<400> 9823

Lys Glu Gly Ala Leu Met Tyr Ala Tyr Glu Arg Leu Ser Ala His Pro
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 Thr Leu Asp Ile Asn Phe Leu Gly Ala Asn Ile Asn Asn Tyr Gly Glu
 20 25 30
 Ile Ile Ile Ser Ala Phe Lys Glu Ile Cys Ala Met Pro Cys Glu Glu
 35 40 45
 Asp Lys Asn Ser Val Asn Phe Asp Leu Ser His Ile Thr Ala Gln Asn
 50 55 60
 Ile Thr Glu Phe
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<211> 431

<212> PRT

<213> B.fragilis

<400> 9824

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190

Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys	Arg	Phe	Phe	Ala	Leu	Leu	Glu
	195						200					205			
Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe	Arg	Ala	Asp	Cys	Gly	Ser	Cys
	210						215				220				
Ser	Lys	Glu	Ile	Val	Ser	Glu	Ile	Glu	Lys	His	Cys	Lys	His	Phe	Tyr
225						230				235					240
Ile	Arg	Ala	Asn	Arg	Cys	Ser	Ser	Leu	Tyr	Asn	Asp	Ile	Phe	Ala	Leu
					245					250					255
Arg	Gly	Trp	Lys	Thr	Glu	Glu	Ile	Asn	Gly	Ile	Gln	Phe	Glu	Leu	Asn
			260						265						270
Ser	Ile	Leu	Val	Glu	Lys	Trp	Glu	Gly	Lys	Cys	Tyr	Arg	Leu	Val	Ile
		275							280						285
Gln	Arg	Gln	Arg	Arg	Asn	Ser	Gly	Asp	Leu	Asp	Leu	Trp	Glu	Gly	Glu
	290						295				300				
Tyr	Thr	Tyr	Arg	Cys	Ile	Leu	Thr	Asn	Asp	Tyr	Lys	Ser	Ser	Thr	Arg
305						310				315					320
Asp	Ile	Val	Glu	Phe	Tyr	Asn	Leu	Arg	Gly	Gly	Lys	Glu	Arg	Ile	Phe
					325					330					335
Asp	Asp	Met	Asn	Asn	Gly	Phe	Gly	Trp	Ser	Arg	Leu	Pro	Lys	Ser	Phe
					340				345						350
Met	Ala	Glu	Asn	Thr	Val	Phe	Leu	Leu	Leu	Thr	Ala	Leu	Ile	His	Asn
		355							360						365
Phe	Tyr	Lys	Thr	Ile	Met	Ser	Arg	Leu	Asp	Thr	Lys	Ala	Phe	Gly	Leu
	370						375					380			
Lys	Lys	Thr	Ser	Arg	Ile	Lys	Ala	Phe	Val	Phe	Arg	Phe	Ile	Ser	Val
385						390					395				400
Pro	Ala	Lys	Trp	Ile	Met	Thr	Ala	Arg	Gln	Tyr	Val	Leu	Asn	Ile	Tyr
					405					410					415
Thr	Glu	Asn	Arg	Ala	Tyr	Ala	Lys	Pro	Phe	Lys	Thr	Glu	Phe	Gly	
			420						425					430	

<210> 9825

<211> 194

<212> PRT

<213> B.fragilis

<400> 9825

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Met	Tyr	Leu	Phe	Arg	Phe	Lys	Asn	Ser	Glu	Tyr	Thr	Ser	Ala	Ala	Arg
			20					25					30		
Cys	Gly	Gly	Ala	Arg	Glu	Thr	Glu	Ala	Leu	Ile	Leu	Leu	Asn	Ser	Val
		35					40					45			
Phe	Val	Ala	Tyr	Ala	Ser	Val	Phe	Asp	Ile	Met	Ala	Lys	Ile	Ala	Ile
	50					55					60				
Glu	Gln	Phe	Glu	Phe	Thr	Lys	Tyr	Asn	Phe	Gly	Asn	Tyr	Arg	Lys	Met
65					70					75					80
Lys	Ser	Ala	Asp	Thr	Ile	Tyr	Lys	Lys	Ser	Leu	Asn	Asn	Ile	Asp	Pro
				85					90					95	
Ser	Leu	Lys	Thr	Glu	Gly	Met	Leu	Phe	Ser	Glu	Pro	Pro	Ile	Ile	Arg
			100					105					110		
Lys	Ile	Gly	Thr	Phe	Arg	Asn	Glu	Phe	Val	His	Asn	Gly	Pro	Trp	Asp
	115						120					125			
Leu	Arg	Cys	Ser	Val	Tyr	Asn	Thr	Ala	Val	Asp	Gly	Lys	Pro	Ala	Asp
	130						135				140				
Val	Ile	Ile	Tyr	Ser	Pro	Asp	Met	Asp	Glu	Ile	Gly	Asn	Ile	Ile	Ser
145					150					155					160
Ser	Gly	Ser	Arg	Asn	Lys	Phe	Tyr	Ser	Gln	Ala	Asn	Arg	Ile	Asn	Ile
				165					170					175	

Gln Leu Pro Asn Met Ile Gln Glu Ala Thr Ile Val Leu Lys Asn Thr
 180 185 190
 Ile Glu

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 <211> 1198
 <212> PRT
 <213> B.fragilis

<400> 9826
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 Arg Phe Ala Ser Glu Ala Arg Asn Ile Leu Met Ser Gly Val Lys Gln
 20 25 30
 Arg Leu Ser Ala Leu Gly Phe Gln Thr Asp Gly Ser Leu Ser Thr Lys
 35 40 45
 Leu Pro Glu Leu Met Gly Gly Gly Ser Val Phe Met Gly Glu Val Gln
 50 55 60
 Ser Glu Asp Phe Tyr His Lys Trp Met Ser Leu Tyr Gln Arg Ile Gln
 65 70 75 80
 Ser His Ser Tyr Arg Glu Val Ala Glu Glu Ala Ala Tyr Thr Trp Phe
 85 90 95
 Asn Arg Leu Met Ala Ile Arg Ile Met Val Lys Asn Glu Leu Val Pro
 100 105 110
 Ala Val Leu Glu Tyr Glu Ser Asp Glu Val Arg Ile Pro Leu Leu Val
 115 120 125
 Ser Glu Ala Arg Gln Arg Arg Phe Pro Gln Met Asn Glu Glu Ser Arg
 130 135 140
 Gln Lys Leu Glu Val Leu Leu Asn Asn Asp Ala Leu Thr Asp Glu Gln
 145 150 155 160
 Phe Ala Val Leu Ile Val Ala Tyr Cys His Ser Asn Pro Ile Ile His
 165 170 175
 Lys Cys Phe Gly Thr Ile Ser Asp Tyr Thr Glu Leu Leu Leu Pro Ser
 180 185 190
 Asn Ile Leu Ala Lys Asp Gly Phe Ile Asp Lys Leu Asn Ala Asp Glu
 195 200 205
 Tyr Ile Ser Asp Glu Asp Tyr Arg Ser Pro Glu Leu Ile Gly Trp Leu
 210 215 220
 Tyr Gln Phe Tyr Ile Ser Glu Arg Lys Asp Glu Val Phe Ala Lys Lys
 225 230 235 240
 Gly Lys Phe Glu Ala Asp Glu Ile Pro Ala Ala Thr Gln Ile Phe Thr
 245 250 255
 Pro Asn Trp Ile Val Lys Tyr Met Val Gln Asn Thr Val Gly Arg Ile
 260 265 270
 Tyr Leu Asp Asn Asn Pro Tyr Thr Asp Ile Lys Lys Glu Met Gln Tyr
 275 280 285
 Leu Val Glu Pro Ala Glu Pro Thr Pro Ala Asp Ala Ile Tyr Gln Phe
 290 295 300
 Asp Asn Ile His Asp Leu Thr Cys Ala Asp Leu Ala Cys Gly Ser Gly
 305 310 315 320
 His Ile Leu Asn Glu Cys Phe Asp Leu Leu Tyr Gln Ile Tyr Ile Glu
 325 330 335
 Glu Gly Tyr Asn Arg Arg Lys Ala Ile Glu Asp Ile Phe Gln Tyr Asn
 340 345 350
 Leu Thr Gly Ile Asp Ile Asp Thr Arg Ala Lys Gln Leu Ala Thr Phe
 355 360 365
 Ala Leu Leu Met Lys Ala Cys Gln Lys Asp Asn Ser Phe Ser Asp Ala
 370 375 380

His	Cys	Met	Pro	Arg	Val	Leu	Asp	Met	Pro	Ile	Pro	Tyr	Ala	Glu	Ala	385	390	395	400
Val	Gly	Lys	Thr	Phe	Asp	Asn	Thr	Asp	Glu	Glu	Arg	Thr	Phe	Thr	Lys	405	410	415	
Thr	Leu	Leu	Ser	Glu	Tyr	Ile	Met	Gly	Gly	Asn	Ala	Glu	Val	Leu	Asp	420	425	430	
Glu	Leu	Thr	Asp	Ala	Val	Leu	Leu	Met	Asn	Asp	Ala	Gln	Thr	Leu	Gly	435	440	445	
Ser	Ile	Met	Lys	Phe	Thr	Ile	Ser	Glu	Arg	Thr	Arg	Asn	Val	Ile	Ala	450	455	460	
Val	Arg	Thr	Ala	Glu	Tyr	Glu	Gln	Gln	Glu	Val	Leu	Pro	Glu	Asp	Ile	465	470	475	480
Arg	Lys	Met	Leu	Pro	Tyr	Met	Gln	Ile	Ile	Leu	Thr	Leu	Thr	Gln	Asn	485	490	495	
Tyr	Ala	Thr	Leu	Val	Met	Asn	Pro	Pro	Tyr	Met	Gly	Gly	Gly	Asn	Met	500	505	510	
Asn	Glu	Val	Leu	Ser	Arg	Tyr	Val	Lys	Asp	Asn	Tyr	Glu	Asp	Ser	Lys	515	520	525	
Ala	Asp	Leu	Phe	Ser	Val	Phe	Met	Glu	Leu	Ala	Ile	Asp	Arg	Leu	Lys	530	535	540	
Gln	Glu	Gly	Lys	Tyr	Gly	Met	Ile	Asn	Met	Gln	Ser	Trp	Met	Phe	Leu	545	550	555	560
Ser	Ser	Phe	Glu	Lys	Leu	Arg	Lys	Lys	Val	Leu	Asp	Asn	Tyr	Gln	Ile	565	570	575	
Asp	Ser	Met	Leu	His	Leu	Gly	Pro	Arg	Thr	Phe	Asp	Glu	Leu	Ser	Gly	580	585	590	
Glu	Val	Val	Gln	Asn	Thr	Ala	Phe	Val	Ile	Ser	Arg	Asn	His	Lys	Glu	595	600	605	
Asp	Val	Asn	Gly	Ile	Tyr	Phe	Arg	Leu	Val	Glu	Gly	Lys	Ser	Cys	Lys	610	615	620	
Glu	Lys	Glu	Gln	Met	Phe	Leu	Asn	Tyr	Ser	Glu	Gln	Gly	Ala	Lys	Ile	625	630	635	640
Tyr	Tyr	Pro	Ala	Ile	Pro	Gln	Ser	Asn	Phe	Glu	Lys	Ile	Pro	Gly	Cys	645	650	655	
Pro	Ile	Gly	Tyr	Trp	Val	Ser	Glu	Asn	Val	Leu	Lys	Thr	Phe	Asn	Gln	660	665	670	
Lys	Asn	Leu	Ile	Ser	Glu	Lys	Ser	Ile	Ala	Arg	Ser	Gly	Phe	Ser	Thr	675	680	685	
Gly	Asn	Asn	Glu	Arg	Tyr	Val	Arg	Gln	Trp	Tyr	Glu	Val	Pro	Leu	Glu	690	695	700	
Lys	Ile	Gly	Phe	Ser	Leu	Ser	Ser	Asn	Asp	Asp	Phe	Leu	Ser	Ser	Asn	705	710	715	720
Tyr	Lys	Tyr	Val	Pro	Phe	Thr	Lys	Gly	Gly	Thr	Phe	Arg	Arg	Trp	Tyr	725	730	735	
Gly	Asn	Leu	Glu	Ser	Val	Val	Asp	Trp	Thr	Asn	Pro	Asn	Thr	Met	His	740	745	750	
Arg	Pro	Arg	Thr	Thr	Tyr	Met	Asn	Leu	Tyr	Tyr	Lys	Pro	Ala	Ile	Thr	755	760	765	
Trp	Asn	Ala	Ile	Cys	Ser	Gly	Lys	Leu	Ser	Cys	Arg	Phe	Tyr	Asp	Arg	770	775	780	
Gly	Phe	Leu	Phe	Glu	His	Ala	Ala	Ala	Ser	Leu	Phe	Val	Asn	Asn	Asp	785	790	795	800
Tyr	Gln	Phe	Glu	Ser	Phe	Leu	Ala	Tyr	Leu	Asn	Thr	Pro	Val	Phe	Gln	805	810	815	
Phe	Ile	Leu	Ser	Ile	Leu	Asn	Pro	Thr	Leu	Asn	Thr	Gly	Ala	Glu	Val	820	825	830	
Val	Ser	Ser	Ile	Pro	Ile	Ile	Ile	Pro	Ser	Ser	Gly	Ile	His	Gln	Lys	835	840	845	
Ile	His	Gln	Asn	Ile	Ser	Ile	Ser	Lys	Gln	Asp	Trp	Asp	Ala	His	Glu				

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850	855	860
Thr Ser Trp Asp Phe	Gln Thr Asn Glu Leu	Ile Gln Leu Ser Ile Asp
865	870	875
Gly Val Gly His Ile	Gln Ala Thr Ile Asn	Glu Lys Thr Ile Gln Asp
	885	890
Tyr Tyr Ser Ile Glu	Leu Leu Leu Thr	Glu Tyr Lys Thr Lys Trp Glu
	900	905
Asp Leu Phe Asn Arg	Leu His Ala Asn	Glu Glu Leu Asn Arg Gln
	915	920
Phe Ile Glu Ile Tyr	Gly Leu Gln Asp	Glu Leu Thr Ser Asp Val Pro
	930	935
Leu Asn Glu Ile Thr	Ile Leu Gln Gln	Gly Glu Ile Ser Ile Glu Gly
945	950	955
Asp Lys Leu Arg Trp	Asn Asp Asp Val	Leu Met Lys Gln Leu Ile Ser
	965	970
Tyr Ala Val Gly Cys	Met Met Gly Arg	Tyr Ser Ile Asp Arg Pro Gly
	980	985
Leu Ile Leu Ala Asn	Gln Gly Asp Ser	Gln Lys Glu Tyr Glu Ala Leu
	995	1000
Val Pro Asn Ser Arg	Phe Ala Ile Asp	Asp Asp Gly Ile Ile Pro Leu
	1010	1015
Met Ser Ala Asn Thr	Glu Phe Thr Asp	Asn Ile Thr Leu Arg Phe Lys
1025	1030	1035
Thr Trp Leu Gly Ile	Thr Phe Gly Glu	Glu Ser Leu Met Asp Asn Leu
	1045	1050
Asn Phe Ile Glu Arg	Ser Leu Gly Lys	Arg Leu Asp Asp Tyr Phe Val
	1060	1065
Lys Asp Phe Trp Lys	Asp His Lys Lys	Met Tyr Gln Asn Arg Pro Ile
	1075	1080
Tyr Trp Leu Phe Ser	Ser Lys Lys Gly	Ser Phe Gln Cys Ile Ala Tyr
	1090	1095
Met His Arg Met Asn	Ala Tyr Thr Ala	Glu Lys Ile Arg Ala Asn Tyr
1105	1110	1115
Leu Leu Pro His Ile	Glu Trp Leu Phe	Asn Lys Gln Asn Glu Met Gln
	1125	1130
Ala Asn Ala Ala Asn	Leu Ser Thr Arg	Glu Arg Lys Glu Leu Asp Ser
	1140	1145
Ile Gly Lys Gln Ile	Glu Glu Cys Arg	Glu Tyr His Asp Arg Leu His
	1155	1160
Val Val Ala Asp Gln	Gln Ile Gly Phe	Asp Leu Asp Asp Gly Val Val
	1170	1175
Val Asn Tyr Ala Lys	Phe Gly Asp Val	Leu Ala Lys Leu Lys
1185	1190	1195

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<211> 490

<212> PRT

<213> B.fragilis

<400> 9827

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	20	25	30
Ile Met Leu Gln Asp	Pro Trp Leu Ile	Glu Lys Leu Ala	His Phe Asp
	35	40	45
Arg Glu Val Ile Pro	Glu Arg Arg Met	His Ala Lys Gly	Ser Gly Ala
	50	55	60
Tyr Gly Thr Phe Thr	Val Thr His Asp	Ile Thr Lys Tyr	Thr Arg Ala

65					70					75				80
Ala	Ile	Phe	Ser	Gln	Val	Gly	Lys	Gln	Thr	Glu	Cys	Phe	Val	Arg Phe
				85					90					95
Ser	Thr	Val	Ala	Gly	Glu	Arg	Gly	Ala	Ala	Asp	Ala	Glu	Arg	Asp Ile
			100					105					110	
Arg	Gly	Phe	Ala	Met	Lys	Phe	Tyr	Thr	Glu	Glu	Gly	Asn	Trp	Asp Leu
		115					120					125		
Val	Gly	Asn	Asn	Thr	Pro	Val	Phe	Phe	Leu	Arg	Asp	Pro	Leu	Lys Phe
	130					135					140			
Pro	Asp	Leu	Asn	His	Ala	Val	Lys	Arg	Asp	Pro	Arg	Asn	Asn	Met Arg
145					150					155				160
Ser	Ala	Asn	Asn	Asn	Trp	Asp	Phe	Trp	Thr	Leu	Leu	Pro	Glu	Ala Leu
				165					170					175
His	Gln	Val	Thr	Ile	Thr	Met	Ser	Pro	Arg	Gly	Ile	Pro	Ala	Ser Tyr
			180					185					190	
Arg	His	Met	His	Gly	Phe	Gly	Ser	His	Thr	Tyr	Ser	Phe	Leu	Asn Ala
		195					200					205		
Glu	Asn	Lys	Arg	Ile	Trp	Val	Lys	Phe	His	Leu	Lys	Thr	Met	Gln Gly
	210					215					220			
Ile	Lys	Asn	Leu	Thr	Asp	Gln	Glu	Ala	Glu	Ala	Ile	Ile	Ala	Lys Asp
225					230					235				240
Arg	Glu	Ser	His	Gln	Arg	Asp	Leu	Tyr	Glu	Ser	Ile	Glu	Arg	Gly Asp
				245					250					255
Phe	Pro	Lys	Trp	Lys	Phe	Gln	Ile	Gln	Leu	Met	Thr	Glu	Glu	Ala
			260					265					270	
Asp	Asn	Tyr	Arg	Ile	Asn	Pro	Phe	Asp	Leu	Thr	Lys	Val	Trp	Pro His
		275					280					285		
Lys	Asp	Phe	Pro	Leu	Gln	Asp	Val	Gly	Ile	Leu	Glu	Leu	Asn	Arg Asn
	290					295					300			
Pro	Glu	Asn	Tyr	Phe	Ala	Glu	Val	Glu	Gln	Ser	Ala	Phe	Asn	Pro Met
305					310					315				320
Asn	Ile	Val	Glu	Gly	Ile	Gly	Phe	Ser	Pro	Asp	Lys	Met	Leu	Gln Gly
				325					330					335
Arg	Leu	Phe	Ser	Tyr	Gly	Asp	Ala	Gln	Arg	Tyr	Arg	Leu	Gly	Val Asn
			340					345					350	
Ser	Glu	Gln	Ile	Pro	Val	Asn	Lys	Pro	Arg	Cys	Pro	Phe	His	Ala Phe
		355					360					365		
His	Arg	Asp	Gly	Ala	Met	Arg	Val	Asp	Gly	Asn	Tyr	Gly	Ser	Ala Lys
	370					375					380			
Gly	Tyr	Glu	Pro	Asn	Ser	Tyr	Gly	Glu	Trp	Gln	Asp	Ser	Pro	Glu Lys
385					390					395				400
Lys	Glu	Pro	Pro	Leu	Lys	Val	His	Gly	Asp	Val	Phe	Asn	Tyr	Asn Glu
				405					410					415
Arg	Glu	Tyr	Asp	Asp	Asp	Tyr	Tyr	Ser	Gln	Pro	Gly	Asp	Leu	Phe Arg
			420					425					430	
Leu	Met	Pro	Ala	Asp	Glu	Gln	Gln	Leu	Leu	Phe	Glu	Asn	Thr	Ala Arg
		435					440					445		
Ala	Met	Gly	Asp	Ala	Glu	Leu	Phe	Ile	Lys	Gln	Arg	His	Val	Arg Asn
	450					455					460			
Cys	Tyr	Lys	Ala	Asp	Pro	Ala	Tyr	Gly	Thr	Gly	Val	Ala	Gln	Ala Leu
465					470					475				480
Gly	Ile	Asp	Leu	Glu	Glu	Ala	Leu	Lys	Glu					
				485					490					

<210> 9828

<211> 1167

<212> PRT

<213> B.fragilis

<400> 9828

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Asn Val Ile Tyr Met Thr Glu Asn Thr Asn Tyr Ile Phe Glu Glu Leu
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Leu Lys Ala Val Gln Pro Asn Arg Gly Leu Phe Val Ile Pro Leu Pro
      20      25      30
Thr Gly Ala Gly Lys Thr Tyr Asn Ser Cys Leu Met Met Ala Glu Glu
      35      40      45
Leu Lys Lys Glu Asp Ala Arg Arg Ile Ile Tyr Val Thr Asp Ala Lys
      50      55      60
Lys Gln Leu Asp Ala Thr Ile Glu Asp Ile Glu Lys Asn Leu Lys Lys
      65      70      75      80
Thr Gly Leu Lys Leu Lys Met Tyr Asp Ile Leu Arg Val Tyr Ser Gln
      85      90      95
Glu Glu Gln Trp Glu Arg Ala Phe Thr Asp Pro Asp Ile Arg Met Arg
      100      105      110
Met Glu Ala Ser Lys Leu Phe Gln Gly Glu Arg Ala Phe Thr Asn Leu
      115      120      125
Lys Arg Leu Tyr Ser Tyr Thr Asp Val Thr Asp Glu Val Ala Glu Glu
      130      135      140
Ile Ser Lys Asn Arg Leu Arg Leu Met Glu Lys Val Arg Lys Glu Val
      145      150      155      160
Phe Thr Pro Ile Arg Gln Thr Tyr Lys Lys Glu Ser Asp Glu Val Ile
      165      170      175
Ala Ser His Ile Val Thr Glu Tyr Pro Ile Leu Glu Glu Leu Tyr Pro
      180      185      190
Glu Leu Leu Phe Tyr Lys Ser Lys Ile Ile Val Leu Thr Ala Ser Lys
      195      200      205
Leu His Thr Thr Ala Ser Pro Lys Leu Val Arg Lys Gly Thr Gln Pro
      210      215      220
Tyr Trp Lys His Ile Glu Asn Ser Leu Val Ile Val Asp Glu Ser Asp
      225      230      235      240
Arg Val Lys Glu Ala Ala Met Lys Arg Leu Phe Asp Cys Glu Cys Gly
      245      250      255
Arg Arg Arg Arg Phe Asn Phe Trp Gly Leu Cys Tyr Phe Ile Cys Leu
      260      265      270
His Tyr Gln Glu Val Met Asp Met Gln Lys Met Pro Glu Trp Ala Asp
      275      280      285
His Lys Met Asn Ile Gln Asp Met Leu Lys Ala Ile Arg Thr Lys Lys
      290      295      300
Glu Glu Leu Ile Asp Asp Ile Asp Pro Gln Lys Ile Leu Cys Gly Leu
      305      310      315      320
Glu Leu Lys Glu Asn Val Asn Arg Gly Asn Phe Ile Phe Tyr Asp Glu
      325      330      335
Asp Gln Thr Phe Ser Ala Glu Asn Val Val Leu Ser Val His Asn Asn
      340      345      350
Lys Glu Glu Tyr Thr Ser Tyr Leu Leu Gln Ser Lys Lys Thr Lys Asp
      355      360      365
Gln Asn Asp Lys Thr Leu Ser Phe Val Ala Asn Arg Ile Met Leu Phe
      370      375      380
Leu Lys Gly Phe Val Gln Ile Val Asp Lys His Ala Glu Val Tyr Ala
      385      390      395      400
Ser Ile Glu Asn Glu Leu Arg Lys Lys Lys Gly Thr Asp Thr Thr Val
      405      410      415
Asp Leu Glu Gly Glu Leu Ala Phe Tyr His Ile Ile Lys Tyr Met Gly
      420      425      430
Val Asn Glu Gly Asn Thr Glu Tyr Arg Ser Ala Leu Gln Glu Leu Arg
      435      440      445
Asn Arg Thr Thr Phe Gln Thr Pro Arg Ser Asn Asn Ser Glu Glu Thr
      450      455      460

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Asp Gly Lys Ser Ile Tyr Asp Lys Gly Ile Ser Phe Ile Glu Ile Tyr
 465 470 475 480
 Ser His Asp Asn Asp Arg Tyr Ser Cys Cys Phe Asp Tyr His Glu Met
 485 490 495
 Arg Cys Met Pro Glu Asn Val Leu Leu Asp Met Val Asn His Asn Arg
 500 505 510
 Val Ile Met Cys Ser Ala Thr Ala Asp Cys Gln Thr Pro Ile His Asn
 515 520 525
 Tyr Asp Phe Asn Tyr Ile Ala Lys Gln Gly Val Lys Val Glu Lys Met
 530 535 540
 Gly Asn Asp Ala Leu His Lys Ile Glu Lys Tyr Ile Ala Leu Asn Tyr
 545 550 555 560
 Ala Asn Pro Lys Val Glu Phe Ser Leu Tyr Asn Glu Glu Glu Thr Glu
 565 570 575
 Pro Lys Glu Ile Leu Glu Asp Tyr Leu Gly Lys Cys Ser Leu Ala Leu
 580 585 590
 Lys Asp Cys Leu Asp Phe Val Met Asp Gly Lys Asn Lys Phe Asn Lys
 595 600 605
 Asn Asn Ser Ala Arg Ile Val Asn Met Leu Asn His Tyr Met Asp Phe
 610 615 620
 Met Lys Lys Pro Glu Ala Lys Ala Trp Leu Tyr Phe Gln Pro Phe Ser
 625 630 635 640
 Tyr Thr Gly Asn Ser Ser Ile Gly Ile Lys Lys Val Leu Asn Ile Leu
 645 650 655
 Gln Gln Ala Arg Val Thr Lys Arg Gly Glu Val Tyr Glu Val Ser Val
 660 665 670
 Met Asp Pro Tyr Val Ile Asp Asp Gly Thr Thr Ser Arg Arg Ala Asp
 675 680 685
 Ile Tyr Pro Lys Leu Asn Val Cys Phe Leu Ser Gly Glu Tyr Phe Lys
 690 695 700
 Asp Asp Leu Glu Ala Val Glu Lys Leu Leu Ala Glu Gln Pro Glu Leu
 705 710 715 720
 Lys Met Phe Cys Phe Val Cys Tyr Gln Ser Gly Ala Val Gly Val Asn
 725 730 735
 Tyr Leu Phe Asp Thr Asp Ala Lys Tyr Arg Lys Lys Cys Cys Leu Lys
 740 745 750
 Ala Pro Asn Thr Lys Asp Arg Lys Asp Thr Arg Cys Asn Phe Asp Gly
 755 760 765
 Ile Ile Met Asp Lys Pro Thr Asn Phe Ile Pro Leu Leu Asp Val Asn
 770 775 780
 Asp Tyr Leu Lys Ala Cys Ile Ser Leu Ser Ile Leu Gly Thr Asp Asn
 785 790 795 800
 Gln Leu Thr Leu Lys Glu Lys Ser Asp Phe Gln Arg Asp Leu Leu Arg
 805 810 815
 Arg Arg His His Cys Ile Thr Asp Asp Leu Asn Glu Leu Lys Asn Arg
 820 825 830
 Glu Ile Gln Ile Lys Ala Val Leu Lys Gly Thr Pro Ala Tyr Asp Ala
 835 840 845
 Phe Cys Leu Lys Trp Ala Val Gln Ala Leu Gly Arg Ile Thr Arg Ser
 850 855 860
 Thr Val Phe Asn Lys Ile Ile His Val Ala Ile Gly Lys Asp Met Ala
 865 870 875 880
 Tyr Ser Met Ile Ile Ala Arg Lys Pro Glu Val Gln Thr Glu Leu Leu
 885 890 895
 Lys Tyr Val Leu Gln Ser Ile Asp Lys Asp Pro Cys Ile Leu Asp Arg
 900 905 910
 Ile Asn Gly Lys Glu Ser Glu Val Asn Ile Ala Phe Lys Asn Gly Glu
 915 920 925
 His Arg Arg Glu Arg His Ile Ser Glu Leu Ile Gly Ile Ser Phe Lys

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930 935 940
 Gly Thr Asp Lys Tyr Ala Arg Gln Ala Arg Asn Arg Val His Lys Ile
 945 950 955 960
 Arg Glu Tyr Val Met Lys His Pro Glu Phe Gly Asn Arg Glu Asp Ile
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 Glu Thr Ser Met Arg Met Tyr Tyr Val Gln Ala Glu Glu Val Lys Lys
 980 985 990
 Met Asn Leu Asn Tyr Thr Asp Ser Cys Val His Met Asp Ala Ile Met
 995 1000 1005
 Arg Gln Arg Phe Ile Arg Asn Tyr Phe Glu Lys Asn Gly Tyr Cys Thr
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 Ala Trp Lys Gly Lys Ala Trp Val Ile Ser Pro Gln Ile Ile Gln Gln
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 Val Tyr Thr Gly Tyr Phe Gly Glu Gln Val Phe Lys Ala Ile Leu Glu
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 Asn Ala Gly Cys Thr Ile Thr Ser Leu Lys Glu Glu Ile Trp Glu Arg
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 Ala Asp Trp Val Val Asn Asn Gln Leu Tyr Val Asp Val Lys Tyr Met
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 Val Asp Gly Asp Phe Asn Arg His Val Lys Ser Gln Ala Trp Glu Arg
 1090 1095 1100
 Lys Ile Lys Asp Cys Gly Gly Asp Tyr Val Ile Val Asn Val Pro Arg
 1105 1110 1115 1120
 Tyr Val Gly Asn Tyr Ser Tyr Ser His Ser Leu Pro Leu Glu Ser Gly
 1125 1130 1135
 Thr Gln Leu Pro Val Ile Asn Gly Leu Ile Asp Val Glu Thr Gly Ala
 1140 1145 1150
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 1155 1160 1165

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<211> 334

<212> PRT

<213> B.fragilis

<400> 9829

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 Asp Val Trp Asn Thr Phe Ile Gly Ser Asn Asp Asn Leu Ile Tyr Arg
 35 40 45
 Glu Ile Ile Leu Asn His Arg Leu Pro Lys Ala Leu Thr Ala Ile Leu
 50 55 60
 Ala Gly Ala Ser Leu Ser Val Ala Gly Val Leu Met Gln Thr Leu Phe
 65 70 75 80
 His Asn Pro Leu Ala Gly Pro Asp Val Leu Gly Val Thr Ser Gly Ala
 85 90 95
 Ser Leu Gly Val Ala Leu Leu Thr Leu Gly Thr Ser Ser Leu Pro Leu
 100 105 110
 Trp Leu Ile Thr Gly Trp Gly Gln Val Thr Ala Ala Ile Ile Gly Ala
 115 120 125
 Ile Gly Val Leu Leu Leu Val Ile Ile Val Ser Ile Lys Ile Pro Gln
 130 135 140
 Thr Ile Ser Leu Leu Ile Ile Gly Met Met Phe Gly Asn Phe Ala Gly
 145 150 155 160
 Ala Ile Val Ser Ile Leu Gln Ser Met Ser Asn Pro Asp Thr Leu Lys
 165 170 175
 Leu Phe Ile Thr Trp Thr Phe Gly Ser Leu Ser Ser Val Gly Trp Glu

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Ser	Asn	Asn	Tyr	Asn	Ile	Met	Ser	Asp	Lys	Lys	Lys	Arg	Tyr	Met	Leu
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Pro	Glu	Glu	Glu	Ile	Pro	His	Tyr	Trp	Tyr	Asn	Ile	Gln	Ala	Asp	Met
			20					25					30		
Val	Asn	Lys	Pro	Met	Pro	Pro	Leu	His	Pro	Gly	Thr	Lys	Gln	Pro	Leu
		35					40					45			
Lys	Ala	Glu	Asp	Leu	Tyr	Pro	Ile	Phe	Ala	Glu	Glu	Leu	Cys	Arg	Gln
	50					55					60				
Glu	Leu	Asn	Gln	Thr	Asp	Gln	Trp	Ile	Glu	Ile	Pro	Glu	Glu	Val	Arg
65					70					75					80
Glu	Met	Tyr	Lys	Tyr	Tyr	Arg	Ser	Thr	Pro	Leu	Val	Arg	Ala	Tyr	Gly
				85					90					95	
Leu	Glu	Lys	Ala	Leu	Gly	Thr	Pro	Ala	His	Ile	Tyr	Phe	Lys	Asn	Glu
			100					105					110		
Ser	Val	Ser	Pro	Met	Gly	Ser	His	Lys	Leu	Asn	Ser	Ala	Ile	Pro	Gln
		115					120					125			
Ala	Tyr	Tyr	Cys	Lys	Lys	Glu	Gly	Val	Gln	Asn	Val	Thr	Thr	Glu	Thr
	130					135					140				
Gly	Ala	Gly	Gln	Trp	Gly	Ala	Ser	Leu	Ala	Tyr	Ala	Ala	Lys	Leu	Phe
145					150					155					160
Gly	Leu	Glu	Ala	Ala	Val	Tyr	Gln	Val	Lys	Ile	Ser	Tyr	Glu	Gln	Lys
				165					170					175	
Pro	Tyr	Arg	Arg	Ser	Ile	Met	Gln	Thr	Tyr	Gly	Ala	Gln	Val	Thr	Pro
			180					185					190		
Ser	Pro	Ser	Met	Ser	Thr	Arg	Ala	Gly	Lys	Asp	Ile	Leu	Thr	Ala	His
		195					200					205			
Pro	Asn	His	Gln	Gly	Ser	Leu	Gly	Thr	Ala	Ile	Ser	Glu	Ala	Ile	Glu
	210					215					220				
Leu	Ala	Gln	Thr	Thr	Pro	Asn	Cys	Lys	Tyr	Thr	Leu	Gly	Ser	Val	Leu
225					230					235					240
Ser	His	Val	Thr	Leu	His	Gln	Thr	Val	Ile	Gly	Leu	Glu	Ala	Glu	Lys
				245					250					255	
Gln	Met	Ala	Met	Ala	Gly	Glu	Tyr	Pro	Asp	Met	Val	Ile	Ala	Cys	Phe

260					265					270					
Gly	Gly	Gly	Ser	Asn	Phe	Gly	Gly	Ile	Ala	Phe	Pro	Phe	Met	Arg	His
275					280					285					
Asn	Ile	Leu	Glu	Gly	Lys	Lys	Thr	Arg	Phe	Ile	Ala	Ala	Glu	Pro	Ala
290					295					300					
Ser	Cys	Pro	Lys	Leu	Thr	Arg	Gly	Lys	Phe	Gln	Tyr	Asp	Phe	Gly	Asp
305					310					315					
Glu	Ala	Gly	Tyr	Thr	Pro	Leu	Leu	Pro	Met	Phe	Thr	Leu	Gly	His	Asn
320					325					330					
Phe	Ala	Pro	Ala	Asn	Ile	His	Ala	Gly	Gly	Leu	Arg	Tyr	His	Gly	Ala
335					340					345					
Gly	Val	Ile	Val	Ser	Gln	Leu	Leu	Lys	Asp	Lys	Leu	Met	Glu	Ala	Val
350					355					360					
Asp	Ile	Ser	Gln	Leu	Glu	Ser	Phe	Glu	Ala	Gly	Cys	Leu	Phe	Ala	Gln
365					370					375					
Val	Glu	Gly	Ile	Ile	Pro	Ala	Pro	Glu	Ser	Cys	His	Ala	Ile	Ala	Ala
380					385					390					
Thr	Ile	Arg	Glu	Ala	Asn	Lys	Cys	Lys	Glu	Ser	Gly	Glu	Glu	Lys	Val
395					400					405					
Ile	Leu	Phe	Asn	Leu	Ser	Gly	His	Gly	Leu	Ile	Asp	Met	Ala	Ser	Tyr
410					415					420					
Asp	Lys	Tyr	Leu	Ser	Gly	Asp	Leu	Val	Asn	Tyr	Ser	Leu	Thr	Asp	Asp
425					430					435					
Asp	Ile	Gln	Lys	Asn	Leu	Asp	Glu	Ile	Gly	Asn	Leu	Ala			
440					445					450					

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 <213> B.fragilis

<400> 9831
 Ile Phe Leu Tyr Leu Cys Asn Leu Cys Asn Lys Tyr Cys Phe Phe Ser
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 Leu Gln Gln Asp Asn Ser Met Lys Lys Asp Gly Phe Ser Glu Ile Tyr
 20 25 30
 Asp Ile Tyr Phe Pro Lys Leu Leu Arg Phe Thr Arg Thr Tyr Leu Ile
 35 40 45
 Ser Glu Asp Glu Ser Glu Asn Ile Val Gln Glu Ile Phe Ile Tyr Leu
 50 55 60
 Trp Glu His Arg Asp Ile Ile Glu Thr Leu Gln Asn Leu Asn Ala Tyr
 65 70 75 80
 Leu Phe Thr Leu Ala Lys Asn Arg Cys Ile Asp Tyr Phe Arg Lys Glu
 85 90 95
 Met Val Arg Glu Val Arg Lys Gly Ser Leu Ser Glu Ile Glu Asn Arg
 100 105 110
 Glu Leu Gln Leu Lys Leu Tyr Ser Leu Glu Ala Phe Asp Asn Asp Arg
 115 120 125
 Leu Ser Asp Ala Asp Ile Glu Glu Ile Leu Asn Asn Ala Ile Asn Arg
 130 135 140
 Leu Pro Glu Arg Cys Arg Glu Ile Phe Ile Met Ser Arg Leu Gln Asn
 145 150 155 160
 Leu Arg Tyr Lys Glu Ile Ala Glu Lys Leu Asn Val Ser Pro Asn Thr
 165 170 175
 Val Glu Asn Gln Ile Val Ile Ala Leu Arg Lys Leu Lys Glu Asp Leu
 180 185 190
 Lys Asp Tyr Phe Pro Leu Phe Val Phe Ile Ile
 195 200

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 <212> PRT
 <213> B.fragilis

<400> 9832

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Ile Gln Leu Tyr Ile Met Gly Lys Thr Val Thr Thr Tyr Leu Ile Asp
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Gly Asp Pro Lys Gly Ser Gln Tyr Val Phe Ile Ser Asn Lys Ile Cys
20      25      30
Gln Met Phe Val Ile Pro Arg Ala Ser Leu Ser Ile Leu Asn Glu Arg
35      40      45
Lys Asp Leu Gln Thr Pro Ala Phe Tyr Ile Leu Leu Gly Glu Asp Glu
50      55      60
Asn Ile Lys Pro Lys Ala Tyr Ile Gly Glu Thr Glu Asn Phe Arg Glu
65      70      75      80
Arg Val Lys Ser His Asp Ser Lys Lys Ser Phe Trp Gln Lys Ala Leu
85      90      95
Ile Phe Ile Ser Lys Asp Ala Ala Met Thr Lys Ala Asp Val Gln Tyr
100      105      110
Leu Glu His Arg Ala Ile Ala Asp Ala Lys Lys Ala Asn Val Phe Met
115      120      125
Leu Asp Glu Asn Lys Gln Ile Pro Lys Ser Pro Asn Leu Pro Glu Tyr
130      135      140
Gln Lys Asp Ser Met Asp Glu Phe Tyr Asp Asp Ile Lys Phe Leu Thr
145      150      155      160
Ser Phe Ile Gly Cys Asn Ile Phe Glu Ile Ile Glu Pro Lys Asp Lys
165      170      175
Pro Ile Phe Gln Ile Val Ser Lys Lys Cys Asp Ala Lys Gly Phe Tyr
180      185      190
Asp Thr Ser Gly Phe Thr Val Leu Lys Gly Ser Arg Ile Ser Asp Lys
195      200      205
Ser Thr Asp Ser Leu Ser Trp Arg Asp Lys Arg Thr Lys Leu Ile Glu
210      215      220
Glu Tyr Ala Asn Asn Lys Asn Phe Val Ile Asn Glu Asp Ile Thr Phe
225      230      235      240
Ser Ser Pro Ser Lys Ala Ala Asp Phe Cys Leu Gly Ser Ser Ser Asn
245      250      255
Gly Trp Ile Met Trp Lys Thr Glu Arg Gly Gln Thr Leu Asp Ser Val
260      265      270
Tyr Arg Lys Gln Leu Glu
275

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 <212> PRT
 <213> B.fragilis

<400> 9833

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Val Ile Thr Tyr Ile Val Met Gly Gln Asn Ile Tyr Cys Tyr Gly Asn
1      5      10      15
Val Ile Phe Ala Asp Lys Ser Lys Lys Arg Ile Met Lys Tyr Ile Gly
20      25      30
Ala His Val Ser Ala Ser Gly Gly Val Glu Phe Ala Pro Val Asn Ala
35      40      45
His Glu Ile Gly Ala Asn Ala Phe Ala Leu Phe Thr Lys Asn Gln Arg
50      55      60
Gln Trp Val Ser Lys Pro Leu Thr Glu Asp Ser Ile Arg Leu Phe Lys
65      70      75      80

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Glu Asn Cys Glu Lys Phe Gly Phe Ala Pro Glu Tyr Ile Leu Pro His
 85 90 95
 Asp Ser Tyr Leu Ile Asn Leu Gly His Pro Glu Glu Glu Gly Leu Thr
 100 105 110
 Lys Ser Arg Ala Ala Phe Leu Asp Glu Met Gln Arg Cys Glu Gln Leu
 115 120 125
 Glu Leu Lys Leu Leu Asn Phe His Pro Gly Ser His Leu Asn Lys Ile
 130 135 140
 Ser Val Glu Glu Cys Leu Asp Arg Ile Ala Glu Ser Ile Asn Leu Ala
 145 150 155 160
 Leu Glu Lys Thr Lys Gly Val Thr Ala Val Ile Glu Asn Thr Ala Gly
 165 170 175
 Gln Gly Ser Asn Leu Gly Asn Glu Phe Trp Gln Leu Lys Tyr Ile Ile
 180 185 190
 Asp Arg Val Glu Asp Lys Ser Arg Val Gly Val Cys Leu Asp Thr Cys
 195 200 205
 His Thr Phe Thr Ala Gly Tyr Asp Phe Leu Asn Asp Tyr Asp Asp Val
 210 215 220
 Phe Gly Glu Phe Gly Glu Val Val Gly Phe Glu Tyr Leu Arg Gly Met
 225 230 235 240
 His Leu Asn Asp Ser Lys Lys Glu Leu Gly Ser Arg Val Asp Arg His
 245 250 255
 Asp Ser Ile Gly Lys Gly Leu Ile Gly Phe Ala Phe Phe Glu Lys Leu
 260 265 270
 Met Lys Asp Pro Arg Phe Asp Asn Met Pro Leu Ile Leu Glu Thr Ile
 275 280 285
 Asp Glu Thr Leu Trp Pro Glu Glu Ile Ala Trp Leu Arg Glu Gln Thr
 290 295 300
 Gln
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<210> 9834

<211> 855

<212> PRT

<213> B.fragilis

<400> 9834

Ser Asn Glu Tyr Met Asn Thr Ser Gln Gln Lys Ile Tyr Asn Tyr Phe
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 Glu Arg Glu Pro Glu Leu Lys Val Leu Phe Ile Phe Asn Asp Val Phe
 20 25 30
 Leu Ala Asp Glu Leu Ser Val Val Glu Trp Lys Ala Gly Tyr Arg Tyr
 35 40 45
 Val Asp Phe Lys Gly Asp Trp Phe Thr Thr Lys Tyr Lys Leu Asp Thr
 50 55 60
 Glu Trp Ala Asp Glu Lys Val Ile Leu Tyr Phe His Gln Pro Ser Pro
 65 70 75 80
 Leu Gln Ile Lys Ser Leu Gln Glu Lys Phe Pro Leu Leu Asp Leu Leu
 85 90 95
 Val Ala Asn Met Glu Tyr His His Gln Asp Tyr Ala Ala Tyr Met Gln
 100 105 110
 Gln Tyr Gly Leu Pro Ser Asn Met Thr Leu Phe Val Glu Lys Asn Ile
 115 120 125
 Gln Gln Leu Gln Ser Asp Arg Met Leu Arg Leu Leu Gln Ser His Tyr
 130 135 140
 Ala Asp Gly Ser Ile Ser Ile Asp Val Ala Val Arg Ala Phe Leu Ser
 145 150 155 160
 Ser Tyr Phe Gln Gln Gln Arg Val Leu Asp Trp Asp Tyr Ile Ile Leu
 165 170 175

Arg Ile Leu Leu Gln Gly Cys Ser Ser Glu Arg Ser Arg Gln Thr Asp
 180 185 190
 Phe Tyr Ser Arg Leu Lys Val Ala Pro Met Val Lys Ala Ala Leu Asp
 195 200 205
 Glu Arg Leu Lys Ser Ile Phe Gly Cys Thr Val Asp Leu Asn Thr Glu
 210 215 220
 Ala Lys Val Glu Lys Leu Ile Gln Val Leu Lys Tyr Asn Ser Ile Val
 225 230 235 240
 Gln Asn Leu Ala Pro Val Asn Ala Asp Asn Tyr Lys Thr Asn Arg Ile
 245 250 255
 Ala Asp Ser Leu Ala Leu Gln Gln Met Asn Arg Ile Leu Glu Leu Ala
 260 265 270
 Leu Ser Ser Ser Lys Thr Ala Ala Ala Leu Gln Glu Val Met Ile Glu
 275 280 285
 Leu Gly Ser Asp Ile His Asp Asp Glu Leu Ile Lys Trp Tyr Gly Thr
 290 295 300
 Glu Ala Asp Tyr Tyr Phe Leu Pro Asp Gln Leu Cys Ile Pro Ile Leu
 305 310 315 320
 Arg Thr Leu Met Glu His Ser Ile Ala Thr Glu Pro Gln Lys Val Ile
 325 330 335
 Asn Arg Leu Glu Glu Leu Ile Ile Lys His Ser Gly Asn Glu Asp Leu
 340 345 350
 Asn Ile Val Met Asp Tyr Asn Leu Val Ala Arg Phe Tyr Glu Gly
 355 360 365
 Ala Leu Ser Leu Gly Ser Leu Thr Leu Asn Thr Pro Asp Glu Tyr Leu
 370 375 380
 Glu Cys Tyr Arg Asn Val Tyr Tyr Leu Thr Asp Gln Leu Tyr Arg Leu
 385 390 395 400
 Ser Ile Glu Asn Tyr Tyr Lys Ile Ser Pro Ser Ile Val Leu Tyr Glu
 405 410 415
 Thr Ile Gln Lys Val Lys Tyr Ala Leu Asp Ile Tyr Tyr Ala Lys Leu
 420 425 430
 Cys Asn Arg Ile Asn Leu Glu Trp Ile His Cys Val Lys Glu Ser Gly
 435 440 445
 Gly Leu Ser Ser Val His Ala Leu Arg Gln Glu Asn Phe Tyr Glu Asn
 450 455 460
 Gln Ile Lys Pro Ile Gln Lys Lys Val Val Val Ile Ile Ser Asp Ala
 465 470 475 480
 Leu Arg Tyr Glu Val Ala Gln Glu Leu Ile Gly Ala Leu Ala Arg Arg
 485 490 495
 Lys His Ile Ala His Leu Asn Thr Ala Ile Ala Met Leu Pro Thr Glu
 500 505 510
 Thr Lys Phe Cys Lys Pro Ala Leu Leu Pro His Arg Glu Leu Arg Leu
 515 520 525
 Tyr Ser Glu Val Asp Gly Glu Gln Asn Met Gly Val Asp Asn Arg Ile
 530 535 540
 Leu Asn Ser Thr Val Lys Arg Thr Glu Gln Val Asn Ala Tyr Arg Thr
 545 550 555 560
 Gly Ala Ile Cys Ile Asp Tyr Asp Glu Val Ala Lys Tyr Asp Gln Val
 565 570 575
 Lys Asn Arg Glu Ile Phe Lys His Pro Leu Val Tyr Val Met His Asp
 580 585 590
 Thr Ile Asp Asp Lys Ser His Gly Ala Thr Ala Lys Glu Val Val Asn
 595 600 605
 Ser Cys Arg Asp Ala Ile Asn Glu Leu Glu Met Leu Val His Lys Ile
 610 615 620
 His Glu Thr Tyr Asn Val Thr Glu Val Tyr Ile Thr Ala Asp His Gly
 625 630 635 640
 Phe Leu Phe Asn Asp Gln Gln Phe Glu Glu Lys Asp Lys His Lys Val

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<213> B.fragilis
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Lys	Ile	Lys	His	Ile	Tyr	Val	Glu	Gly	Tyr	Lys	Val	Phe	His	Asn	Phe
			20					25					30		
Asp	Ile	Asp	Phe	Thr	Glu	Gly	Glu	Lys	Thr	Gln	Asn	Leu	Ile	Val	Ile
		35					40					45			

Thr Gly Val Asn Gly Asn Gly Lys Thr Thr Leu Leu Arg Asp Ile Ile
 50 55 60
 Ala Asp Thr Asn Ala Thr Lys Lys Pro Lys Cys Ala Ile Thr Ile Gln
 65 70 75 80
 Asp Asp Lys Gly Leu Asn Thr Phe Leu Leu Pro Leu Gln Ser Glu Asn
 85 90 95
 Glu Arg Tyr Glu Glu Ala Phe Ser Lys Val Ser Phe Tyr Gln Thr Arg
 100 105 110
 Asp Asn Ser Ser Val Glu Lys Leu Gln Lys Asp Ile Val Ser Tyr Val
 115 120 125
 Asp Lys Val Val Tyr Glu Ile Gly Lys Thr Ser Phe Asp Ala Tyr Val
 130 135 140
 Glu Ile Gln Arg Met Leu Asp Asp Ile Phe Cys Gly Phe Asn Leu Gln
 145 150 155 160
 Ile Arg Phe Lys Ser Leu Asn Arg Glu Lys Lys Leu Ile Phe Thr Asn
 165 170 175
 Thr Arg Gln Glu Glu Phe Gly Ile Asp Gly Leu Ser Ser Gly Glu Leu
 180 185 190
 Gln Ile Leu Ser Lys Val Phe Val Leu Phe Thr Asp Asp Met Lys Gly
 195 200 205
 His Val Ile Leu Ile Asp Glu Pro Glu Ser Ser Leu His Pro Ser Trp
 210 215 220
 Gln Thr Arg Ile Leu Pro Val Leu Arg His Cys Ser Glu Thr Asn Asp
 225 230 235 240
 Cys Gln Ile Ile Val Ala Thr Gln Ser Pro Leu Val Ile Asp Ser Ala
 245 250 255
 Tyr Lys Asp Glu Ile Arg Phe Leu Thr Arg Asp Asn Glu Gly Tyr Val
 260 265 270
 Lys Ala Glu Ile Ala Ser Val Thr Leu Ser Ala Glu Gln
 275 280 285

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<211> 194

<212> PRT

<213> B.fragilis

<400> 9837

Asn Met Asn Leu Asn Asp Asn Tyr Ile Phe Thr Leu Ser Phe Pro Glu
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 Ala Lys Ser Ile Val Ala Ser Gly Asp Ile His Gly Asp Phe Ile Gln
 20 25 30
 Leu Val Phe Lys Leu Cys Val Gln Tyr Gln Met Lys Asp Thr Ile Leu
 35 40 45
 Ile Val Ala Gly Asp Cys Gly Phe Gly Phe Glu Lys Lys Glu Ser Tyr
 50 55 60
 Glu Asn Met Val Lys Gln Asn Val Lys Arg Met Asn Glu Ala Asn Asn
 65 70 75 80
 Trp Ile Val Phe Ile Arg Gly Asn His Asp Asn Pro Ala Tyr Phe Asp
 85 90 95
 Gly Tyr Thr Phe Lys Tyr Lys Arg Phe Ile Ala Ile Pro Asp Tyr Thr
 100 105 110
 Ile Leu Gln Ala Arg Ser His Thr Val Leu Cys Val Gly Gly Gly Ile
 115 120 125
 Ser Ile Asp Arg Gln Tyr Arg Leu Gln Ala Trp Glu Lys Lys Gln Val
 130 135 140
 Arg Ser Val Ser Glu Ser Ser Thr Asp Lys Leu Ala Arg Asn Val Tyr
 145 150 155 160
 Arg Ser Thr Glu Ala Pro Val Phe Asp Lys Glu Lys Met Val Thr Ile
 165 170 175

Ser Ala Lys Tyr Thr Val Asp Ala Ala Ile Thr His Thr Ala Pro Ser
 180 185 190
 Phe Cys

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 <212> PRT
 <213> B.fragilis

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 Ile Cys Arg Gln Gly Asn Met Val Cys Ile Arg Arg Gly Ile Tyr Ala
 1 5 10 15
 Thr Leu Glu Gln Leu Ala Asn Thr Met Ile Asp Leu Glu Val Ala Val
 20 25 30
 Pro Asp Gly Ile Leu Cys Leu Phe Ser Ala Trp Asn Ile His Gly Leu
 35 40 45
 Thr Thr Ser Leu Pro Gln Ala Tyr His Val Ala Ile Lys Arg Gly Lys
 50 55 60
 Lys Ile Arg Leu Pro Glu Tyr Pro Pro Ile Ala Leu His Phe Leu Ala
 65 70 75 80
 Glu Ser Ile Leu Glu Leu Gly Ala Glu Glu Lys Val Val Ser Asn Tyr
 85 90 95
 Glu Ile Lys Val Tyr Asn Val Glu Leu Ser Val Cys Asp Ala Ile Lys
 100 105 110
 Phe Arg Asn Lys Ile Gly Ile Asp Val Cys Ser Lys Val Val Asn Asn
 115 120 125
 Tyr Leu Ala Leu Pro Asn Arg Asp Leu Thr Leu Leu Met Asp Asn Ala
 130 135 140
 Asn Lys Leu Arg Ile Ala Lys Thr Leu Glu Lys Tyr Leu Glu Ile Lys
 145 150 155 160
 Leu

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 Cys Arg Phe Leu Ile Val Asp Val Tyr Ser Lys Phe Ile Gly Phe Tyr
 20 25 30
 Trp Trp Val Trp Phe Ala Cys Ile Thr Gly Lys Asp Arg Ile Asn Asp
 35 40 45
 Thr Gln Leu Ile Tyr Tyr Gly Leu Arg Leu Val Val Arg Leu Phe Ala
 50 55 60
 Leu
 65

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Glu Lys Lys Asp Met Asn Arg Leu Lys Val Val Leu Ala Glu Lys Lys
 20 25 30
 Arg Thr Asn Lys Trp Leu Ala Glu Gln Leu Arg Lys Asp Pro Ala Thr
 35 40 45
 Val Ser Lys Trp Cys Thr Asn Ser Ala Gln Pro Asn Leu Glu Asn Leu
 50 55 60
 Ile Glu Ile Ala Lys Cys Leu Glu Val Ser Val Asn Glu Leu Ile Arg
 65 70 75 80
 Asn Glu

<210> 9841
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 <213> B.fragilis

<400> 9841
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9842
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 <212> PRT
 <213> B.fragilis

<400> 9842
 Leu Leu Ile Asn Met Thr Ala Lys Lys Thr Asp Tyr Ile Ile Ile Tyr
 1 5 10 15
 Thr Phe Leu Cys Ala Ser Ile Leu Ser Ile Ala Val Leu Val Arg Met
 20 25 30
 Phe Ala Val Ala Glu Leu Lys Met Asp Glu Phe Ser Ala Phe Met Ala
 35 40 45
 Phe Phe Val Thr Cys Leu Leu Leu Gly Gly Ile Tyr Phe Ser Phe Gln
 50 55 60
 Ser Ile Leu Asn Asp Cys Leu Leu Pro Ile Met Glu Arg Ile Phe Ser
 65 70 75 80
 Lys Lys His Leu His Ile Glu Pro Glu Leu Lys Val Thr Leu Ile Ala
 85 90 95
 Glu Thr Leu Gln Glu Lys Pro Ser Ile Pro Lys Tyr Gly Glu Tyr Lys
 100 105 110
 Gln Thr Ala Gln Asp Lys Leu Ala Gln Lys Gln Ala
 115 120

<210> 9843
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 <212> PRT
 <213> B.fragilis

<400> 9843

Asn	Leu	Asn	Lys	Thr	Phe	Leu	Leu	Ser	Ile	His	Tyr	Ser	Pro	Lys	Asp
1				5					10					15	
Val	Phe	Leu	Asn	Val	Arg	Leu	Lys	Thr	His	Gln	Lys	Arg	Val	Ile	Tyr
			20					25					30		
Tyr	Glu	Lys	Gly	Tyr	Ile	Lys	Met	Lys	Arg	Glu	Asn	Ile	Asn	Pro	Asn
		35					40					45			
Asn	Tyr	His	Leu	Phe	Glu	Asn	Glu	Val	Ile	Ser	Ile	Lys	Ile	Glu	Val
	50					55					60				
Lys	Asn	Lys	Ser	Phe	Tyr										
65					70										

<210> 9844

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<212> PRT

<213> B.fragilis

<400> 9844

His	Lys	Tyr	Asn	Met	Lys	His	Leu	Thr	Val	Tyr	Phe	Leu	Leu	Ala	Leu
1				5					10					15	
Gln	Gly	Val	Leu	Phe	Ser	Phe	Ser	Leu	Ser	Ala	Ala	Thr	Pro	Gln	Asn
			20					25					30		
Ala	Ile	Ala	Tyr	His	Asp	Gly	Asn	Val	Arg	Phe	Ser	Val	Leu	Thr	Asp
		35					40					45			
Gly	Val	Ile	Arg	Met	Glu	Trp	Ser	Pro	Ser	Gly	Ser	Phe	Thr	Asp	Asp
	50					55					60				
Pro	Ser	Phe	Val	Ala	Ile	His	Arg	Asn	Leu	Pro	Ile	Pro	Lys	Tyr	Thr
65					70					75					80
Val	Gln	Asn	Lys	Asn	Ala	Thr	Val	Val	Ile	Ser	Thr	Ala	Arg	Met	Lys
				85					90					95	
Leu	Lys	Tyr	Lys	Lys	Gly	Gln	Gly	Pro	Phe	Thr	Lys	Asp	Asn	Leu	Thr
			100					105					110		
Ile	Thr	Ser	Ala	Lys	Gly	Met	Phe	Pro	Phe	Gln	Trp	Thr	Pro	Gly	Thr
		115					120					125			
Ile	Gln	Lys	Gly	Asn	Leu	Lys	Gly	Thr	Asp	Arg	Thr	Leu	Asp	Gly	Phe
	130					135					140				
Glu	Gly	Asp	His	Asn	Ile	Tyr	Ser	His	Gln	Asp	Met	Lys	Leu	Glu	Asp
145					150					155					160
Gly	Leu	Leu	Ser	Thr	Asp	Gly	Trp	Thr	Leu	Ile	Asp	Asp	Ser	Lys	Asn
			165						170					175	
Phe	Leu	Phe	Asp	Asn	Ser	Glu	Trp	Ala	Trp	Val	Lys	Ala	Arg	Glu	His
			180					185					190		
Lys	Asp	Gly	Gln	Asp	Trp	Tyr	Phe	Met	Ala	Tyr	Gly	His	Asp	Tyr	Lys
		195					200					205			
Ala	Ala	Leu	Lys	Asp	Phe	Thr	Val	Phe	Ala	Gly	Lys	Val	Pro	Leu	Pro
	210					215					220				
Pro	Arg	Tyr	Ala	Phe	Gly	Tyr	Trp	Trp	Ser	Arg	Tyr	Trp	Ser	Tyr	Ser
225					230					235					240
Asp	Lys	Glu	Met	Arg	Gln	Leu	Val	Asp	Asn	Phe	His	Thr	Tyr	Asn	Ile
			245						250					255	
Pro	Leu	Asp	Val	Leu	Val	Val	Asp	Met	Asp	Trp	His	Tyr	Thr	Asp	Pro
		260						265					270		
Gly	Phe	Gly	Gly	Trp	Thr	Gly	Trp	Thr	Trp	Asn	Arg	Arg	Leu	Phe	Pro
	275						280					285			
Asn	Pro	Ala	Lys	Phe	Leu	Gly	Tyr	Leu	Lys	Ser	Asn	Asp	Leu	Lys	Ile
	290					295					300				
Thr	Leu	Asn	Leu	His	Pro	Ala	Asp	Gly	Val	Ala	Pro	Tyr	Glu	Glu	Lys
305					310					315					320
Tyr	Pro	Glu	Met	Ala	Gln	Trp	Met	Gly	Val	Asp	Thr	Ala	Lys	Gln	Glu
				325					330					335	

Arg	Ile	Pro	Trp	Val	Val	Ser	Asp	Lys	Arg	Phe	Ile	Asn	Gly	Met	Phe
			340					345					350		
Asn	Lys	Val	Leu	Arg	Pro	Met	Glu	Lys	Gln	Gly	Val	Asp	Phe	Trp	Trp
		355					360					365			
Leu	Asp	Trp	Gln	Gln	Trp	Met	Tyr	Asp	Lys	Lys	Val	Asp	Ser	Leu	Ser
	370					375					380				
Asn	Thr	Trp	Trp	Ile	Asn	Tyr	Val	Phe	Phe	Ser	Asp	Met	Glu	Arg	Asn
385					390					395					400
Arg	Asp	Thr	Arg	Pro	Met	Leu	Tyr	His	Arg	Trp	Gly	Gly	Leu	Gly	Asn
				405					410					415	
His	Arg	Tyr	Gln	Ile	Gly	Phe	Ser	Gly	Asp	Ala	Val	Ile	Ser	Trp	Lys
			420					425					430		
Ser	Leu	Glu	Phe	Gln	Pro	Tyr	Phe	Thr	Asn	Cys	Ala	Ser	Asn	Val	Leu
		435					440					445			
Tyr	Gly	Tyr	Trp	Ser	His	Asp	Ile	Gly	Gly	His	Met	Phe	Lys	Gly	Gly
	450					455					460				
Asp	Lys	Glu	Ile	Leu	Asp	Pro	Glu	Leu	Phe	Thr	Arg	Trp	Met	Gln	Tyr
465					470					475					480
Gly	Ala	Leu	Thr	Pro	Val	Met	Arg	Thr	His	Ser	Thr	Lys	Asn	Ser	Val
				485					490					495	
Leu	Asn	Lys	Glu	Leu	Trp	Asn	Phe	Lys	Gly	Asp	Tyr	Phe	Glu	Ala	Leu
		500					505						510		
Arg	Asn	Ser	Ile	Leu	Phe	Arg	Tyr	Gln	Leu	Ala	Pro	Tyr	Ile	Tyr	Thr
	515						520					525			
Met	Ala	Arg	Glu	Thr	Tyr	Asp	Asn	Gly	Ile	Ser	Ile	Cys	Arg	Pro	Met
	530					535					540				
Tyr	Tyr	Asp	Tyr	Pro	Glu	Ala	Lys	Glu	Ala	Tyr	Asp	Phe	Lys	Ser	Glu
545					550					555					560
Tyr	Met	Phe	Gly	Asp	Gln	Ile	Leu	Val	Ala	Pro	Ile	Thr	Thr	Pro	Met
				565					570					575	
Gln	Asn	Gly	Leu	Ser	Thr	Val	Lys	Val	Trp	Leu	Pro	Glu	Gly	Asn	Asp
			580					585					590		
Trp	Phe	Glu	Trp	Thr	Thr	Gly	Thr	Leu	Leu	Lys	Gly	Gly	Gln	Ile	Ile
	595					600						605			
Glu	Arg	Ser	Phe	Thr	Leu	Thr	Glu	Tyr	Pro	Val	Tyr	Val	Lys	Ala	Gly
	610					615					620				
Ser	Val	Leu	Pro	Leu	Tyr	Asn	Arg	Val	Lys	Asn	Leu	Asn	Ser	Asn	Ser
625					630					635					640
Glu	Glu	Ile	Ile	Val	Asn	Ile	Phe	Pro	Gly	Glu	Asn	Gly	Ser	Phe	Thr
				645					650					655	
Phe	Tyr	Glu	Asp	Asn	Gly	Asn	Asp	Lys	Tyr	Tyr	Ala	Asn	Glu	Tyr	Ala
		660						665					670		
Arg	Thr	Arg	Met	Tyr	Thr	Glu	Arg	Lys	Glu	Asn	His	Leu	Thr	Val	Thr
		675						680				685			
Val	Gly	Pro	Arg	Gln	Gly	Lys	Tyr	Arg	Asn	Met	Pro	Thr	Asp	Arg	Gln
	690					695					700				
Phe	Lys	Ile	Lys	Val	Leu	Gly	Ser	Ala	Ile	Pro	Glu	Thr	Ile	Thr	Ile
705					710					715					720
Asn	Gly	Asn	Arg	Ala	Glu	Tyr	Glu	Tyr	Ile	Gly	Asp	Glu	Leu	Ala	Leu
				725					730					735	
Leu	Ile	Thr	Ile	Pro	Gln	Thr	Ala	Cys	Asp	Gln	Glu	Lys	Thr	Ile	Glu
		740						745					750		
Ile	Gln	Tyr	Ser	Thr	Ser	Ile	Pro	Glu	Leu	Asn	Asp	Gly	Ile	Val	Ser
	755						760					765			
Gln	Phe	Lys	Arg	Phe	Ser	Lys	Ala	Ile	Thr	Ala	Leu	Lys	Tyr	Arg	Asp
	770					775					780				
Ala	Gly	Ile	Val	Leu	Thr	Pro	Ala	Met	Gly	Ala	Thr	Glu	Ala	Thr	Ser
785					790					795					800
Ile	Ala	Leu	Thr	Tyr	Ser	Pro	Glu	Arg	Phe	Asn	Glu	Leu	Ile	Glu	Thr

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805 810 815
 Phe Lys Arg Asn Tyr Ser Gln Met Pro Glu Met Leu Lys Glu Gln Lys
 820 825 830
 Leu Asn Glu Ala Asn Ser Gln Trp Phe Met Lys Ala Ile Gly Trp Lys
 835 840 845
 Lys

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 <212> PRT
 <213> B.fragilis

<400> 9845
 Lys Asn Asn Lys Val Leu Thr Leu Leu His Cys Lys Ser Met Lys Lys
 1 5 10 15
 Asn Leu Leu Leu Leu Ser Tyr Ala Ile Lys Gln Arg Glu Ile Ile Gln
 20 25 30
 Ile Leu Arg Ile Met Lys Cys Thr Val Leu Leu Leu Phe Leu Leu Ile
 35 40 45
 Leu Gln Ala His Ala Ser Val Ser Ser Gln Asn Ala Arg Val Asn Met
 50 55 60
 Ser Arg Asn Gln Leu Pro Leu Lys Glu Phe Met Ala Glu Ile Glu Lys
 65 70 75 80
 Gln Thr Asp Tyr Leu Phe Ile Tyr Ser Asp Ala Glu Ile Asn Ala Ser
 85 90 95
 Arg Gln Val Thr Val Lys Lys Gly Thr His Arg Val Ala Asp Leu Leu
 100 105 110
 Arg Glu Val Leu Ser Lys Asn Asn Ile Ser Tyr Asn Phe Ala Asp Asn
 115 120 125
 Tyr Ile Ser Leu His Val Arg Lys Glu Ala Asp Val Gln Ser Leu Ala
 130 135 140
 Val Ser Pro Gln Gln Lys Lys Asn Thr Val Leu Val Ser Gly Thr Ile
 145 150 155 160
 Val Asp Thr Ala Gly Glu Pro Ile Ile Gly Ala Asn Ile Lys Leu Lys
 165 170 175
 Gly Ala Gln Gly Thr Gly Thr Ile Thr Asp Val Glu Gly Asn Phe Lys
 180 185 190
 Leu Glu Val Pro Thr Asn Gly Val Leu Ile Val Ser Phe Ile Gly Tyr
 195 200 205
 Gln Gln Gln Glu Val Ala Val Asn Gly Lys Thr Met Leu Lys Ile Lys
 210 215 220
 Met Ala Glu Asp Ala Glu Met Ile Asp Glu Val Val Val Thr Ala Leu
 225 230 235 240
 Gly Ile Lys Arg Glu Glu Lys Ala Leu Gly Tyr Ala Val Gln Lys Val
 245 250 255
 Gly Gly Ser Lys Leu Ser Thr Val Lys Pro Val Asn Ile Ala Thr Ser
 260 265 270
 Leu Thr Gly Lys Val Ala Gly Leu Asn Val Thr Asn Ser Thr Glu Phe
 275 280 285
 Asn Thr Ala Pro Thr Leu Lys Leu Arg Gly Glu Thr Pro Leu Leu Val
 290 295 300
 Val Asp Gly Val Pro Tyr Ser Asn Ile Ser Leu Asn Asp Ile Ala Ala
 305 310 315 320
 Asp Asp Ile Glu Ser Val Asp Val Leu Lys Gly Ala Thr Ala Ser Ala
 325 330 335
 Leu Tyr Gly Ala Arg Gly Gly Ser Gly Ala Ile Met Val Thr Thr Lys
 340 345 350
 Lys Gly Ser Gln Glu Gly Leu Asn Ile Ser Val Asn Ser Ser Thr Met

		355						360						365				
Phe	Asn	Ala	Gly	Tyr	Leu	Val	Leu	Pro	Glu	Val	Gln	His	Gly	Tyr	Ser			
	370					375					380							
Thr	Gly	Gln	Gly	Gly	Lys	Tyr	Thr	Ala	Ala	Asp	Phe	Val	Trp	Gly	Asp			
385					390					395					400			
Lys	Leu	Asp	Ile	Gly	Arg	Thr	Ala	Val	Gln	Tyr	Asp	Pro	Tyr	Thr	Tyr			
				405					410					415				
Glu	Trp	Lys	Glu	Met	Pro	Leu	Val	Ser	Lys	Gly	Lys	Asp	Asn	Phe	Lys			
			420					425					430					
Asn	Phe	Leu	Glu	Thr	Gly	Phe	Ile	Thr	Asn	Asn	Asn	Ile	Ser	Ile	Ser			
		435				440						445						
Gln	Thr	Gly	Lys	Tyr	Gly	Ser	Phe	Arg	Ser	Ser	Leu	Ser	His	Val	Tyr			
	450				455						460							
Asn	Lys	Gly	Gln	Tyr	Pro	Asn	Gln	Arg	Leu	Asn	Lys	Ile	Thr	Tyr	Ser			
465					470					475					480			
Val	Gly	Gly	Asp	Met	Lys	Phe	Gly	Lys	Leu	Ser	Phe	Glu	Gly	Gly	Ala			
				485					490					495				
Ile	Tyr	Asn	Lys	Arg	Phe	Tyr	Pro	Asn	Gly	Glu	Gly	Ala	Gly	Tyr	Gly			
			500					505					510					
Gly	Gly	Gly	Tyr	Ile	Tyr	Asn	Leu	Leu	Val	Trp	Thr	Gly	Thr	Asp	Tyr			
		515				520						525						
Asp	Val	Arg	Asp	Tyr	Lys	Asn	Tyr	Trp	Arg	Lys	Lys	Asp	Glu	Glu	Gln			
	530					535					540							
Asn	Trp	Met	Asn	Asp	Val	Trp	Tyr	Asp	Asn	Pro	Tyr	Tyr	Leu	Ala	His			
545					550					555					560			
Glu	Met	Thr	Ser	Ser	Asn	Asp	Tyr	Asp	Lys	Val	Asn	Thr	Tyr	Leu	Ser			
				565					570					575				
Gly	Lys	Tyr	Asp	Ile	Met	Pro	Trp	Leu	Asn	Phe	Ser	Met	Arg	Ala	Gly			
			580					585					590					
Ala	Asp	Ala	Tyr	Ala	Ser	Arg	Thr	Glu	Lys	Lys	Asn	Ala	Met	Ser	Ala			
		595					600					605						
Arg	Gly	Gly	Trp	Asp	Lys	Asn	Gly	Tyr	Phe	Tyr	Thr	Ser	Lys	Ser	Thr			
	610					615					620							
Gly	Phe	Ser	Phe	Asn	Gly	Asp	Ala	Leu	Leu	Ser	Ala	Asn	His	Ser	Phe			
625				630						635					640			
Phe	Asp	Phe	Ala	Ile	Asp	Gly	Phe	Val	Gly	Gly	Thr	Arg	Tyr	Tyr	Tyr			
				645					650					655				
Tyr	Asp	Asp	Ala	Ile	Ser	Ser	Asn	Thr	Arg	Asn	Gly	Leu	Ser	Ile	Pro			
			660				665						670					
Gly	Tyr	Tyr	Ser	Leu	Lys	Ala	Ser	Val	Asp	Pro	Ile	Ala	Ser	Ser	Ser			
		675					680					685						
Ser	Tyr	Lys	Gln	Lys	Gln	Val	Asn	Ser	Ile	Tyr	Gly	Lys	Phe	Ser	Ala			
	690					695					700							
Ser	Trp	Lys	Ser	Thr	Val	Phe	Val	Asp	Val	Thr	Ala	Arg	Asn	Asp	Trp			
705					710													

Lys Tyr Asn Leu Thr Arg Glu Ala Thr Ile Ser Gly Ser Ser Gly Phe
 835 840 845
 Thr Lys Thr Leu Val Asn Tyr Asp Glu Glu Gln Val Arg Arg Gly Val
 850 855 860
 Glu Val Ser Leu Thr Ala Ser Leu Ile Gln Thr Lys Asp Trp Asn Trp
 865 870 875 880
 Glu Val Asn Ala Asn Trp Ala Arg Asp Arg Tyr Phe Tyr Ala Lys Val
 885 890 895
 Asp Pro Val Tyr Ser Thr Gln Lys Pro Trp Val Ala Ala Gly Lys Arg
 900 905 910
 Trp Asp Trp Tyr Gly Ile Tyr Asp Trp Glu Arg Asp Pro Gln Gly Asn
 915 920 925
 Ile Ile His Glu Asn Gly Tyr Pro Val Gln Ser Lys Tyr Gln Ser Val
 930 935 940
 Met Gly Asn Glu Tyr Pro Asp Trp Ile Trp Gly Leu Ser Thr Thr Leu
 945 950 955 960
 Arg Tyr

<210> 9846
 <211> 325
 <212> PRT
 <213> B.fragilis

<400> 9846
 Asn Ile Leu Lys Met Ser Glu Leu Ile Asp Lys Tyr Phe Ala Gly Glu
 1 5 10 15
 Met Thr Cys Glu Glu Lys Lys Asp Leu Phe Asp Arg Ile Glu Ser Asp
 20 25 30
 Glu Ala Leu Lys Lys Glu Phe Leu Arg Met Gln Asn Val Val Ala Leu
 35 40 45
 Thr Gln Ile Leu Ser Arg Gln Asp Asp Ser Glu Thr Ser Arg Lys Gly
 50 55 60
 Lys Gln His Phe Met Gln Leu Leu Phe Arg Lys Arg Leu Lys Arg Ala
 65 70 75 80
 Ile Thr Val Ser Leu Lys Tyr Ala Ala Val Phe Ala Val Leu Val Val
 85 90 95
 Gly Thr Phe Tyr Thr Ala Lys Leu Tyr Leu Ser Glu Glu Phe Gly Lys
 100 105 110
 Ser Tyr Thr Ile Val Thr Ala Pro Lys Gly Gln Arg Val Lys Ile Glu
 115 120 125
 Leu Pro Asp Gly Thr Ile Ala Trp Leu Ser Pro Cys Ser Arg Leu Arg
 130 135 140
 Phe Ala Ala Ser Phe Asn Glu Thr Asp Arg Lys Ile Glu Leu Asp Gly
 145 150 155 160
 Ala Thr Tyr Phe Asp Val Ala Lys Asn Pro Glu Lys Pro Phe Val Val
 165 170 175
 Ser Ala Lys Gly Tyr Arg Ile Arg Val Leu Gly Thr Lys Phe Asn Ile
 180 185 190
 Ser Ala Tyr Lys Asn Ser Lys Glu Phe Glu Thr Asp Leu Val Glu Gly
 195 200 205
 Cys Val His Ile Tyr Asp Pro Ala Asp Ile Arg Asn Glu Val Phe Leu
 210 215 220
 Gln Pro Lys Glu Lys Ala Val Leu Trp Gly Asp Arg Leu Met Lys Arg
 225 230 235 240
 Glu Ser Asp Phe Asp Asn Glu Glu Tyr Leu Lys Asn Gly Val Val Ser
 245 250 255
 Phe Leu Ser Glu Pro Phe Gly Arg Val Leu Asn Ser Val Ala Leu Trp
 260 265 270

Asn Asp Val Asn Ile Lys Ile Glu Arg Ser Val Asn Ala Thr Gln Arg
 275 280 285
 Ile Ser Gly Lys Phe Arg Gln Ser Asp Ser Leu Glu Ser Ile Leu Lys
 290 295 300
 Ala Leu Gln Gly Ala Met Pro Phe Lys Tyr Lys Ile Val Ser Glu Glu
 305 310 315 320
 Glu Ile Ile Ile Tyr
 325

<210> 9847

<211> 320

<212> PRT

<213> B.fragilis

<400> 9847

Ile Pro Leu Lys Leu Leu Phe Ile Pro Leu Trp Ile Val Leu Gln Arg
 1 5 10 15
 Thr Gln Ser Tyr Met Gln Lys Arg Leu Ile His Leu Ser Ile Ile Phe
 20 25 30
 Phe Leu Leu Cys Pro Ala Leu Val Val Ala Gln Asn Ser Pro Leu Glu
 35 40 45
 Thr Gln Leu Lys Lys Ala Ile Glu Gly Lys Lys Ala Glu Ile Gly Ile
 50 55 60
 Ala Val Ile Ile Asp Gly Gln Asp Thr Ile Thr Val Asn Asn Asp Ile
 65 70 75 80
 His Tyr Pro Met Met Ser Val Phe Lys Phe His Gln Ala Leu Ala Leu
 85 90 95
 Ala Asp Tyr Met His His Gln Lys Gln Pro Leu Glu Thr Arg Leu Leu
 100 105 110
 Ile Lys Lys Ser Asp Leu Lys Pro Asp Thr Tyr Ser Pro Leu Arg Glu
 115 120 125
 Thr Tyr Pro Gln Gly Gly Ile Glu Met Ser Ile Ala Asp Leu Leu Lys
 130 135 140
 Tyr Thr Leu Gln Gln Ser Asp Asn Asn Ala Cys Asp Ile Leu Phe Asn
 145 150 155 160
 Tyr Gln Gly Gly Pro Asp Ala Val Asn Lys Tyr Leu His Ser Leu Gly
 165 170 175
 Ile Arg Glu Cys Ala Val Ile His Thr Glu Asn Asp Met His Glu Asn
 180 185 190
 Leu Glu Phe Cys Tyr Gln Asn Trp Thr Thr Pro Leu Ala Ala Lys
 195 200 205
 Leu Leu Glu Ile Phe Arg Asn Glu Asn Leu Phe Asp Lys Glu Tyr Lys
 210 215 220
 Asn Phe Ile Tyr Gln Thr Met Val Glu Cys Gln Thr Gly Gln Asp Arg
 225 230 235 240
 Leu Ile Ala Pro Leu Leu Asp Lys Lys Val Thr Met Gly His Lys Thr
 245 250 255
 Gly Thr Gly Asp Arg Asn Ala Lys Gly Gln Gln Ile Gly Cys Asn Asp
 260 265 270
 Ile Gly Phe Ile Leu Leu Pro Asp Gly His Ala Tyr Ser Ile Ala Val
 275 280 285
 Phe Val Lys Asp Ser Glu Ala Asp Asn Arg Glu Asn Ser Glu Ile Ile
 290 295 300
 Ala Glu Ile Ser Arg Ile Val Tyr Glu Tyr Val Thr Gln Gln Ile Asp
 305 310 315 320

<210> 9848

<211> 174

<212> PRT

<213> B.fragilis

<400> 9848

Met	Asn	Thr	Asn	Glu	Arg	Pro	Glu	Met	Thr	Glu	Lys	Gln	Ser	Cys	His
1			5					10						15	
Trp	Tyr	Leu	Ala	Phe	Thr	Ala	Ser	Arg	Ala	Glu	Gln	Arg	Val	Lys	Gln
		20					25						30		
Glu	Leu	Asp	Gln	Arg	Lys	Val	Arg	Asn	Tyr	Leu	Pro	Leu	Arg	Lys	Ile
		35					40					45			
Thr	Tyr	Gln	Trp	Gln	Gly	Arg	Ser	Lys	Glu	Ala	Leu	Cys	Pro	Gln	Ile
	50					55					60				
Ala	Arg	Cys	Val	Leu	Ile	Trp	Thr	Ser	Leu	Ser	Asp	Ile	Arg	Gln	Leu
65					70					75					80
Ser	Gly	Ile	Ser	Gly	Leu	Ile	Ile	Pro	Gln	Asn	Ile	Trp	Asp	Tyr	Arg
			85						90					95	
Val	Pro	Glu	Trp	Gln	Val	Glu	Ser	Tyr	Gln	Leu	Leu	Phe	Ser	Gln	Met
			100					105						110	
Asp	Thr	Ala	Val	Glu	Trp	Ile	Pro	Asp	Cys	Leu	Glu	Ser	Ala	Thr	Met
		115					120					125			
Val	Arg	Val	Thr	Gly	Gly	Pro	Leu	Thr	Gly	Leu	Val	Gly	Glu	Leu	Asp
	130					135					140				
Thr	Ser	Asp	Thr	Gly	Phe	Arg	Ile	Arg	Ile	Arg	Phe	His	Ser	Met	Gly
145					150					155					160
Cys	Phe	Arg	Val	Ala	Val	Pro	Glu	Glu	Trp	Ile	Glu	Lys	Phe		
			165						170						

<210> 9849

<211> 422

<212> PRT

<213> B.fragilis

<400> 9849

Thr	Met	Lys	Lys	Leu	Leu	Val	Tyr	Ala	Asp	Phe	Asp	Trp	Leu	Lys	Asp
1				5					10					15	
Ile	Glu	Leu	Ile	Gly	Glu	Leu	Ser	Tyr	Glu	Ser	Leu	Arg	Gly	Ser	Asp
		20					25						30		
Ser	Tyr	Ala	Phe	Lys	Phe	Asn	Asp	Glu	Trp	Leu	Lys	Leu	Tyr	Gly	Asn
		35				40						45			
Leu	Phe	Ile	Ser	Ala	Asp	Leu	Asn	Asn	Tyr	Lys	Gly	Leu	Gln	Tyr	Thr
	50					55					60				
Gln	Pro	Glu	Lys	Asp	Ile	Phe	Gly	Cys	Phe	Ser	Asp	Ala	Leu	Pro	Asp
65					70					75					80
Arg	Trp	Gly	Arg	Thr	Leu	Leu	Asn	Arg	Arg	Glu	Gln	Ile	Leu	Ala	Ser
			85						90					95	
Glu	Glu	Lys	Arg	Pro	Val	Arg	Arg	Leu	Ser	Ser	Phe	Asp	Tyr	Leu	Leu
			100					105					110		
Gly	Ile	Asp	Asp	Ser	Ser	Cys	Met	Gly	Gly	Phe	Arg	Phe	Lys	Glu	Thr
		115					120					125			
Pro	Asp	Gly	Asp	Phe	Ile	Asn	Ser	Ser	Asn	Thr	Leu	Arg	Ile	Pro	Pro
	130					135					140				
Leu	Thr	Ser	Ile	Arg	Glu	Leu	Ile	His	Ala	Ser	Gly	Glu	Ile	Glu	Lys
145					150					155					160
Ser	Glu	Glu	Glu	Asn	Lys	Ile	Pro	Asp	Lys	Lys	Trp	Leu	Thr	Gln	Leu
			165						170					175	
Leu	Gln	Pro	Gly	Phe	Ser	Leu	Gly	Gly	Ala	Arg	Pro	Lys	Ala	Ser	Ile
		180						185					190		
Val	Asp	Thr	Asn	Lys	Val	Leu	Tyr	Val	Thr	Lys	Phe	Pro	Ser	Arg	Lys
		195					200					205			
Asp	Asp	Tyr	Asn	Thr	Gly	Leu	Trp	Glu	His	Phe	Cys	His	Leu	Leu	Ala

210	215	220
Lys Lys Ala Gly Ile Asn Ala Ala Ser Thr Arg Val Ile Ser Thr Ser		
225	230	235
Asp Lys Tyr His Thr Leu Leu Ser Arg Arg Phe Asp Arg Lys Asp Asp		240
	245	250
Gly Lys Arg Ile His Phe Ala Ser Ala Met Thr Leu Leu Gly Leu Ser		255
	260	265
Asp Gly Ala Asn Ala Ser Thr Gly Asn Gly Tyr Leu Asp Met Val Asp		270
	275	280
Phe Ile Leu Gln Asn Cys Thr Glu Val Asn Lys Asn Leu Gln Glu Leu		285
	290	295
Tyr Arg Arg Val Ala Phe Asn Ile Cys Val Gly Asn Ser Asp Asp His		300
305	310	315
Phe Arg Asn His Gly Phe Leu Leu Thr Ser Lys Gly Trp Thr Leu Ser		320
	325	330
Pro Ala Tyr Asp Met Asn Pro Thr Leu Asn Glu Tyr Gln Ser Leu Leu		335
	340	345
Ile Ser Asn Ser Ser Asn Lys Ala Asp Leu Thr Ile Leu Leu Asp Ala		350
	355	360
Cys Glu Asp Tyr Met Leu Pro Trp Asp Val Ala Ser Lys Ile Ile Ser		365
	370	375
Glu Val Val Ile Ala Ile Arg Asp Trp Lys Ile Leu Ala Thr Lys Leu		380
385	390	395
Gly Ile Thr Asn Ser Glu Met Glu Leu Phe Gly Ser Thr Ile Ser Asn		400
	405	410
Arg Ile Lys Glu His Ile		415
	420	

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 Ser Glu Asn Ala Thr Glu Leu Leu Lys Asp Glu Val Lys Thr Asn Gln
 35 40 45
 Ile Leu Gln Val Asn Ser Gln Lys Ala Arg Gln Thr Phe Ile Thr Glu
 50 55 60
 Phe Lys Arg Arg Tyr Asn Ala Val Pro Ala Thr Phe Trp Val Asn Phe
 65 70 75 80
 Gln Thr Met Thr Glu Gln Ala Gln Arg Ala Gly Leu Leu Tyr Ala Ile
 85 90 95
 Leu Lys Ala Tyr Lys Leu Ala Phe Asp Phe His Phe Asn Val Thr Val
 100 105 110
 Lys Arg Trp Asn Ser Val Glu Gln Thr Leu Lys Lys Asn Asp Ile Met
 115 120 125
 Met Glu Phe Asn Glu Leu Ser Ala Arg Asp Glu Phe Val Asp Ser Trp
 130 135 140
 Thr Asp Asn Thr Lys Asp Arg Cys Ala Ser Gln Tyr Leu Thr Ile Leu
 145 150 155 160
 Arg Gln Ala Gly Leu Leu Asn Ser Lys Thr Asp Glu Leu Lys Pro Ile
 165 170 175
 His Leu Glu Pro Ser Asp Tyr Thr Phe Tyr Ile Arg Ser Gly Glu Glu
 180 185 190
 Trp Phe Leu Glu Ala Cys Leu Leu Tyr Pro Tyr Glu Val Asn Asp Ile

195
Lys Ser Gln Val Lys
210

200

205

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Ile Val Ser Gly Lys Val Glu Phe Asn Pro Thr Gly Lys Asn Gly Glu
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Arg Ile His Gly Trp Phe Ala Pro Asn Gly His Ser Gly Phe Pro Met
35 40 45
Lys Gly Phe Ile Lys Lys Tyr Gln Ser Leu Gly Gln Gly Gly Lys Val
50 55 60
Tyr Pro Asn Arg Asp
65

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1 5 10 15
Arg Lys Val Asn Pro Ala Val Ser Ala Ser Asp Leu Ser Glu Asp Thr
20 25 30
Val Leu Thr Glu Ile Val Glu Tyr Val Phe Thr Gln Glu Ile Ile Val
35 40 45
Asn Leu Tyr His Ile Leu Ile Asn Ile Lys Ile Asn Gln Gly Ser His
50 55 60
Val Gly Ile Trp Ile Asn Gly Tyr Tyr Gly Ser Gly Lys Ser His Phe
65 70 75 80
Leu Lys Tyr Ala Ser Tyr Cys Leu Ser Asn Lys Tyr Ser Glu Met Ala
85 90 95
Phe Ile Arg Leu Ile Glu Ala Thr Gln Glu Met Met Leu Gly Glu Lys
100 105 110
Asp Val Thr Ala Leu Glu Gln Ala Gly Val Ser Leu Ser Glu Leu Arg
115 120 125
Ala Leu Gln Ser Trp Tyr Val Asn Lys Ala Asp Val Glu Met Val Ile
130 135 140
Phe Asn Ile Gly Asp Val His Asp Ala Asn Ala Asp Gln Ala Thr Thr
145 150 155 160
Phe Thr Thr Ile Phe Trp Asn Gln Phe Asn Ala Lys Arg Gly Tyr Asn
165 170 175
Ser Phe Asn Leu Ala Met Ala Gln Tyr Leu Glu Lys Ala Leu Asp Asp
180 185 190
Asp Gly Lys Phe Gln Glu Phe Lys Asp Tyr Val Lys Ser Lys Gly Tyr
195 200 205
Asp Trp Glu Arg Asn Ile Ser Arg Phe Ala Ala Gly Arg Leu Asp Leu
210 215 220
Ala Leu Gln Met Ala Lys Glu Val Asp Pro Ala Leu Ala Ile Asp Val
225 230 235 240
Ile Arg Glu Arg Ile Leu Lys Asn Asp Val Asn Val Ser Val Glu Ala
245 250 255

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Phe	Ala	Ala	Glu	Met	Lys	Glu	Tyr	Leu	Asp	His	Lys	Asn	Asn	Arg	Asn
			260					265					270		
Phe	Arg	Ile	Leu	Phe	Phe	Ile	Asp	Glu	Val	Ser	Gln	Phe	Ile	Gly	Glu
		275					280					285			
His	Arg	Asp	Leu	Leu	Leu	Gln	Leu	Gln	Ser	Leu	Val	Lys	Arg	Leu	Asp
		290				295					300				
Glu	Val	Cys	Glu	Ser	Gln	Val	Trp	Ile	Ser	Cys	Thr	Ala	Gln	Gln	Thr
305					310					315					320
Leu	Glu	Glu	Val	Val	Thr	Lys	Val	Gly	Gly	Ser	Ile	Ser	Asn	Pro	Glu
				325					330				335		
Asp	Glu	Val	Gly	Lys	Ile	Leu	Gly	Arg	Phe	Glu	Val	Arg	Ala	Ser	Leu
			340				345					350			
Gln	Gly	Thr	Ser	Pro	Glu	Tyr	Ile	Thr	Gln	Lys	Arg	Ile	Leu	Asp	Lys
		355					360					365			
Lys	Gly	Glu	Val	Glu	Leu	Gln	Leu	Ser	Glu	Leu	Phe	Glu	Lys	Lys	Lys
		370				375					380				
Ala	Met	Leu	Asp	Ala	Gln	Phe	Ile	Leu	Pro	Ser	Thr	Tyr	Gln	Ala	Tyr
385					390					395					400
Lys	Asn	Lys	Glu	Asp	Phe	Ala	Ala	Phe	Tyr	Pro	Phe	Val	Pro	Tyr	Gln
				405					410					415	
Phe	Gln	Leu	Ile	Met	Lys	Val	Leu	Asp	Ser	Phe	Val	Asn	Met	Asn	Tyr
			420					425				430			
Val	Asp	Lys	Gln	Val	Lys	Gly	Asn	Glu	Arg	Ser	Leu	Leu	Asn	Ile	Thr
		435					440					445			
Phe	Ser	Ile	Ala	Lys	Glu	Thr	Ala	Glu	Cys	Glu	Val	Gly	Glu	Phe	Ile
		450				455					460				
Pro	Phe	Asp	Arg	Phe	Phe	Gly	Ala	Met	Phe	Gln	Gly	Ser	Met	Gln	His
465					470					475					480
Ile	Gly	Gln	Arg	Ala	Met	Ala	Asn	Ala	Arg	Glu	Ala	Leu	Asp	Met	Val
				485					490					495	
Thr	Asp	Glu	Asp	Lys	Gln	Thr	Phe	Tyr	Arg	Arg	Val	Val	Tyr	Val	Leu
			500					505					510		
Phe	Met	Val	Cys	Asn	Leu	Ser	Glu	Val	Asp	Lys	Gln	Ser	Phe	Ser	Ala
		515					520					525			
Thr	Ile	Asp	Asn	Ile	Val	Thr	Leu	Leu	Met	Thr	Lys	Val	Asp	Ala	Asn
		530				535						540			
Lys	Ala	Ala	Ile	Lys	Glu	Glu	Val	Ser	Gln	Val	Leu	Ser	Phe	Leu	Met
545					550					555					560
Asp	Lys	Ala	Val	Ile	Arg	Lys	Ile	Lys	Thr	Asp	Asn	Gly	Thr	Glu	Val
				565					570				575		
Tyr	Glu	Phe	Tyr	Thr	Glu	Glu	Glu	Ser	Lys	Val	Ala	Gln	Ile	Ile	Lys
			580					585					590		
Asn	Gln	Lys	Val	Asp	Asn	Asn	Thr	Tyr	Thr	Glu	Glu	Leu	Tyr	Lys	Ile
		595					600					605			
Ile	Ser	Asp	His	P											

				725						730				735	
Asp	Ala	Cys	Pro	Val	Ile	Ser	Gly	Gln	Asn	Ile	Leu	Ser	Pro	Ser	Val
			740					745					750		
Leu	Gly	Ser	Ala	Lys	Asn	Lys	Glu	Arg	Tyr	Lys	Ala	Ala	Leu	Thr	Asn
		755					760					765			
His	Leu	Lys	Asn	Leu	Tyr	Asp	Ser	Ala	His	Leu	Val	Asn	Gly	Ser	Glu
	770					775					780				
Tyr	Pro	Lys	Ser	Gln	Ser	Glu	Leu	Ser	Asp	Lys	Ile	Leu	Arg	Pro	Val
785					790				795						800
Glu	Ala	Thr	Leu	Val	Asp	Leu	Pro	Leu	Thr	Thr	Ala	Glu	Lys	Lys	Val
			805						810					815	
Lys	Asp	Tyr	Leu	Asp	Arg	Ala	Pro	His	Asp	Val	Thr	Val	Ala	Asp	Val
			820					825					830		
Val	Arg	Gln	Phe	Ala	Lys	Val	Pro	Tyr	Gly	Trp	Ala	Asp	Cys	Cys	Ser
		835					840				845				
Ile	Tyr	Val	Val	Asn	Glu	Leu	Val	Arg	Arg	His	Leu	Tyr	Ala	Phe	Asn
	850					855				860					
Tyr	Asn	Asn	Asn	Pro	Asn	Val	Ser	Arg	Glu	Asp	Thr	Ala	Arg	Asn	Ile
865					870					875					880
Met	Arg	Asp	Ala	Asn	Arg	Phe	Thr	Ile	Glu	Pro	Ala	Lys	Ala	Ile	Ser
			885						890					895	
Gln	Asp	Ile	Leu	Asn	Glu	Phe	Ile	Glu	Ala	Trp	Lys	His	Ile	Phe	Asn
		900						905					910		
Val	Val	Thr	Leu	Lys	Gly	Ser	Asn	Asp	Ser	Thr	Glu	Leu	Tyr	Arg	Asn
		915						920					925		
Cys	Lys	Glu	Thr	Asp	Asp	Ser	Ala	Leu	Asn	Arg	Leu	Leu	Ser	Asn	Tyr
	930					935					940				
Arg	Lys	Leu	Ser	Arg	Lys	Ile	Asn	Gly	Cys	Pro	Phe	Glu	Ser	Val	Ile
945					950					955					960
Asp	Glu	Ala	Ile	Thr	Leu	Met	Glu	Lys	Trp	Thr	Asn	Ile	Arg	Asp	His
			965						970					975	
Lys	Glu	Phe	Phe	Leu	Thr	Ile	Thr	Glu	Ala	Lys	Glu	Ser	Ala	Ala	Thr
		980						985					990		
Leu	Phe	Asp	Arg	Cys	Lys	Asn	Ile	Asn	Thr	Phe	Val	Asn	Asp	Gln	Phe
	995						1000					1005			
Glu	Gly	Tyr	Gln	Lys	Val	Lys	Leu	Phe	Ile	Gln	Glu	Asn	Arg	Asp	Asn
	1010					1015					1020				
Phe	Ala	Phe	Leu	Pro	Lys	Asp	Gln	Glu	Glu	Ala	Gln	Asn	Arg	Leu	Cys
1025					1030					1035					1040
Ala	Ile	His	Asn	Asp	Met	Glu	Pro	Trp	Asp	Asn	Met	Pro	Ala	Tyr	Leu
			1045						1050					1055	
Lys	Met	Met	Arg	Asn	Leu	Ser	Gly	Arg	Leu	Glu	Glu	Cys	Lys	Ala	Thr
		1060						1065					1070		
Leu	Ile	Lys	Thr	Ile	Asn	Thr	Asn	Tyr	Asn	Lys	Ala	Phe	Asp	Glu	Leu
	1075						1080					1085			
Glu	Glu	Tyr	Ala	Val	Ser	Met	Lys	Val	Gly	Arg	Asp	Lys	Phe	Ala	Lys
	1090					1095					1100				
Arg	Asp	Ile	Thr	Ile	Ser	Gln	Lys	Ile	Asn	Thr	Gly	Asn	Phe	Tyr	Ala
1105					1110					1115					1120
Leu	Gln	Ala	Asn	Ala	Val	Ile	Ala	Gly	Phe	Tyr	Glu	Glu	Gln	Met	Lys
			1125						1130					1135	
Lys	Ile	Asn	Glu	Ala	Val	Pro	Lys	Pro	Val	Asp	Pro	Lys	Pro	Tyr	Thr
		1140						1145					1150		
Pro	Val	Ala	Asp	Gly	Gly	Gly	Ser	Val	Val	Lys	Glu	Pro	Ile	Ala	Thr
	1155					1160							1165		
Pro	Arg	Ala	Arg	Lys	Met	Val	His	Leu	His	Thr	His	Thr	Thr	Gln	Pro
	1170				1175					1180					
Ile	Gln	Thr	Glu	Ala	Asp	Ile	Asp	Arg	Tyr	Leu	Gln	Lys	Leu	Lys	Ala
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Glu Leu Met Gln His Ile Gly Gly Asp Tyr Asp Ile Ile Ile Ser
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<211> 728

<212> PRT

<213> B.fragilis

<400> 9853

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 Trp Lys Glu Phe Leu Glu Asp Tyr Asp Phe Phe Lys Ile Glu Tyr Gly
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 Asp Val Asp Phe Asp Asn Ile Thr Gly Ile Tyr Cys Lys Leu Glu Gly
 35 40 45
 Leu Cys Pro Asn Ser Ala Ile Cys Ala Phe Asn Lys Met Ala Lys Asn
 50 55 60
 Ala Gln Pro Gly Glu Ser Ser Lys His Arg Ile Phe Leu Phe Ala Ser
 65 70 75 80
 Ser Lys Lys Glu Lys Val Thr Val Ala Gln Leu Gln Glu Cys Met Lys
 85 90 95
 Lys Val Asn Val Lys Ile Lys Gln Ile Thr Tyr Cys Pro Ala His Asn
 100 105 110
 Glu Gly Ile Tyr Thr Tyr Asn Met Leu Asn Leu Leu Ser Met Ile
 115 120 125
 Pro Asn Arg Asn Lys Thr Leu Ser Tyr Ala His Gly Lys Leu Ile Cys
 130 135 140
 Gly Thr Cys Ser Ser Ile Tyr Asn Lys Gly Arg Ser Ala Gly Glu Glu
 145 150 155 160
 Leu Gly Leu His Ile Ser Phe Asp Tyr Asp Asn Leu Leu Thr Ala His
 165 170 175
 Thr Leu Thr Phe Ala Glu Glu Asp Arg Val Glu Gln Lys Lys Lys Lys
 180 185 190
 Gly Ser Ser Val Tyr His Leu Glu Phe Asp Glu Lys Arg Ile Tyr Phe
 195 200 205
 Ser Ser Lys Lys Lys Lys Gly Thr Gln Glu Tyr Tyr Asn His Pro Ser
 210 215 220
 Phe Leu Arg Lys Asp Asn Lys Asn Arg Ile Pro Phe Leu Gly Phe Gly
 225 230 235 240
 Asp Val Glu His Phe Glu Glu Ser Gln Ala Tyr Ile Ile Arg Thr Val
 245 250 255
 Leu Gln Glu Phe Leu Thr Thr Tyr Ser Lys Tyr Ile Ser Val Asp Pro
 260 265 270
 Ile Glu Tyr Lys Lys Pro Met Leu Leu Lys Ala Gln Asp Ala Glu Phe
 275 280 285
 Lys Lys Glu Asp Glu Leu Leu Arg Asp Met Leu Ser Thr Ser Trp Ile
 290 295 300
 Asp Ile Val Cys His Thr Ser Glu Ala Gly Val Glu Glu Leu Arg Asn
 305 310 315 320
 Leu Ile Glu Gln Lys Ser Arg Glu Tyr Ile Lys Lys Leu Phe Ser Asn
 325 330 335
 Asn Phe Glu Gly Cys Tyr Glu Lys Asp Lys Ser Lys Lys Gln Ile Cys
 340 345 350
 Ile Arg Ile Val Gly Asp Lys Tyr Gln Glu Gly Glu Leu Ser Asp Ser
 355 360 365
 Lys Arg Lys Ala Leu Asp His Arg Arg Leu Lys Glu Lys Val Asp Leu
 370 375 380
 Ile Glu Lys Lys Ile Pro Thr Gln Asp Val Met Ile Lys Ser Glu Ile
 385 390 395 400

Glu Met Ala Thr Ile Lys Asn Ile Phe Arg Gln Ile Leu Ile Lys Asp
 405 410 415
 Tyr Cys Ile Lys Glu Thr Leu Pro Gln Tyr Met Ile Asp Arg Phe Lys
 420 425 430
 Gly Cys Val Ile Thr Tyr Ala Glu Lys Lys Thr Asn Asp Leu Tyr Tyr
 435 440 445
 Phe Val Gln Leu Thr Ile Gly Lys Asp Gly Leu Ile Ile Tyr Lys Val
 450 455 460
 Glu Glu Pro Arg Leu Ser His Asp Asp Val Ile Thr Val Met Gly Glu
 465 470 475 480
 Asn Phe Glu Ser Tyr Glu Tyr His Ile Pro Ala Phe Lys Lys Gly Tyr
 485 490 495
 Asn Lys Asn Phe Ile Tyr Cys Ile Glu Lys Asp Gly Ile Thr Tyr Asn
 500 505 510
 Ile Tyr Asp Thr Cys Glu Phe Val Phe Pro Glu Met Glu Glu Ile His
 515 520 525
 Gln Ala Leu Val Glu Leu Lys Asn Val Gln Val Pro Val Val Ile Tyr
 530 535 540
 His Asp Leu Met Asp Met Val Gln Arg Asp Glu Ser Lys Val Leu Cys
 545 550 555 560
 Lys Gln Arg Ile Arg Glu Tyr Ala Asp Asn Val Pro His Asp Leu Phe
 565 570 575
 Tyr Ser Asp Ile Lys Lys Leu Gly Lys Glu Ala Pro Leu Glu Glu Lys
 580 585 590
 Leu Thr Arg Lys Leu Met Arg Phe Val Thr Ser Lys Tyr Asn Ile Lys
 595 600 605
 Lys Gly Gln Asp Phe Arg Thr Ala Gly Arg Ser Glu Glu Thr Leu Ala
 610 615 620
 Ala Cys Val Asn Val His Tyr Trp Lys Gln Asp Ala Lys Leu Trp Lys
 625 630 635 640
 Tyr Cys Ala Gly Pro Asn Thr Lys Gly Lys Phe Asp Ser Ile Asn His
 645 650 655
 Lys Val Tyr Val Arg Glu Leu Val Ser Asp Met Thr Pro Asn Glu Ala
 660 665 670
 Phe Val Asn Glu Leu Ile Tyr Ser Leu Gly Asp Gly Trp Asn Lys Ile
 675 680 685
 Asn Glu Phe Ser Val His Pro Ser Ile Phe Lys Phe Leu Lys Glu Arg
 690 695 700
 Leu Glu Ile Tyr Lys Ala Gln Glu Gln Leu Asn Glu Leu Thr Lys Lys
 705 710 715 720
 Leu Lys Tyr Lys Tyr Phe Leu Gly
 725

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<211> 679

<212> PRT

<213> B.fragilis

<400> 9854

Thr Thr Met Glu Leu His Asp Lys Val Met Asn Ala Phe Ile Gly Lys
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 Val Val Arg Lys Asp Leu Ala Phe Leu Val Lys Gly Gly Leu Pro Val
 20 25 30
 Pro Thr Tyr Val Leu Glu Tyr Leu Leu Gly Gln Tyr Cys Ala Ser Asp
 35 40 45
 Asp Glu Glu Val Ile Ala Glu Gly Leu Glu Lys Val Lys Gln Val Ile
 50 55 60
 Gln His Asn Tyr Val His Arg Ala Asp Ala Glu Ser Ile Lys Gly Ile
 65 70 75 80

Ile	Arg	Glu	Asn	Gly	His	His	Arg	Ile	Ile	Asp	Lys	Val	Thr	Val	Val
				85					90					95	
Leu	Asn	Glu	Lys	Ala	Asp	Glu	Tyr	His	Ala	Ser	Phe	Ala	Asn	Leu	Gly
			100					105					110		
Leu	Gly	Ser	Val	Pro	Ile	Gly	Thr	Glu	Tyr	Val	Arg	Lys	Asn	Pro	Lys
		115					120					125			
Leu	Leu	Ser	Gly	Asn	Gly	Val	Trp	Cys	Ile	Val	Thr	Val	Gly	Tyr	Ile
	130					135					140				
Ser	Gly	Glu	Asp	Val	Lys	Val	Arg	Trp	Glu	Ile	Gln	Ser	Leu	Lys	Pro
145					150					155					160
Ile	Gln	Ile	Ser	Asn	Val	Asp	Val	Gln	Glu	Tyr	Ile	Asp	Gln	Arg	Gln
				165					170					175	
Gln	Phe	Ser	Thr	Asp	Glu	Trp	Ile	Asp	Phe	Leu	Ile	His	Thr	Ile	Gly
			180					185					190		
Leu	Asn	Pro	Glu	Lys	Leu	Asn	Arg	Arg	Glu	Lys	Phe	Ile	Ser	Leu	Ala
		195					200					205			
Arg	Leu	Leu	Pro	His	Val	Glu	Asn	Asn	Phe	Asn	Phe	Met	Glu	Leu	Gly
	210					215					220				
Pro	Lys	Gly	Thr	Gly	Lys	Ser	His	Val	Phe	Gln	Glu	Leu	Ser	Pro	Ser
225					230					235					240
Gly	Val	Leu	Val	Ser	Gly	Gly	Asp	Val	Thr	Ser	Ala	Arg	Leu	Phe	Val
				245					250					255	
Lys	Met	Ser	Gly	Asn	Arg	Glu	Ile	Leu	Gly	Leu	Val	Gly	Tyr	Trp	Asp
			260					265					270		
Val	Val	Ala	Trp	Asp	Glu	Phe	Glu	Gln	Gln	Lys	Gly	Arg	Ala	Val	Asp
		275					280					285			
Ala	Val	Met	Ile	Asp	Thr	Met	Gln	Asn	Tyr	Leu	Ala	Asn	Lys	Ser	Phe
		290				295					300				
Asn	Arg	Gly	Lys	Gly	Thr	His	Glu	Ala	Ser	Ala	Ser	Met	Val	Phe	Val
305					310					315					320
Gly	Asn	Thr	Lys	His	Thr	Ile	Pro	Phe	Met	Leu	Asn	Asn	Ser	His	Leu
				325					330					335	
Phe	Glu	Ser	Ile	Pro	Thr	Ser	Phe	Ile	Lys	Gly	Ala	Phe	Leu	Asp	Arg
			340					345					350		
Ile	His	Leu	Tyr	Asn	Pro	Gly	Trp	Glu	Ile	Arg	Met	Leu	Lys	Lys	Glu
		355					360					365			
Ser	Phe	Ser	Lys	Gly	Tyr	Gly	Leu	Ile	Thr	Asp	Tyr	Ile	Ala	Ala	Val
	370					375					380				
Leu	His	Glu	Leu	Arg	Asn	Arg	Asp	Phe	Ser	Ser	Asn	Leu	Asn	Ser	Phe
385					390					395					400
Val	Lys	Phe	Ser	Gly	Thr	Leu	Ser	Glu	Arg	Asp	His	Leu	Ala	Ile	Arg
				405					410					415	
Lys	Thr	Phe	Ser	Gly	Met	Val	Lys	Leu	Leu	Tyr	Pro	Asp	Ser	Asn	Tyr
			420					425					430		
Thr	Asp	Glu	Glu	Ala	Leu	Glu	Ile	Ile	Glu	Phe	Ala	Ala	Glu	Cys	Arg
		435					440					445			
Lys	Arg	Val	Lys	Asp	Gln	Leu	Tyr	Ile	Ile	Asp	Glu	Thr	Phe	Arg	Ala
	450					455					460				
Glu	Pro	Ala	Lys	Phe	Glu	Tyr	Leu	Ile	Leu	Lys	Thr	Gly	Glu	Thr	Lys
465					470					475					480
Gln	Val	Glu	Thr	Leu	Glu	Arg	Ile	Glu	Asn	Pro	Ala	Ile	Ile	Glu	Asp
				485					490					495	
Ile	Gln	Thr	Glu	Glu	Pro	Ile	Glu	Val	Ala	Ser	Glu	Pro	Ala	Thr	Thr
			500					505					510		
Thr	Ser	Asn	Pro	Ser	Ile	Arg	Pro	Arg	Ile	Pro	Gln	Leu	Ala	Ser	Lys
		515					520					525			
Gln	Val	Asp	Ile	Arg	Met	Asn	Gln	Arg	Gly	Val	Ser	Tyr	Lys	Ser	Leu
	530					535					540				
Phe	Gly	Asp	Tyr	Ile	Arg	Thr	Ala	Lys	Lys	Ile	Thr	Ile	Val	Asp	Pro

545 550 555 560
 Phe Ile Arg Val Gly His Gln Ile Asp Asn Leu Ile Glu Phe Ile Gln
 565 570 575
 Met Ala Arg Glu Val Cys Leu Thr Pro Glu Glu Leu Glu Ile Glu Leu
 580 585 590
 His Thr Gln Asn Glu Glu Asp Lys Ile Pro Glu Val Ile Asp Ile Phe
 595 600 605
 Asn Glu Leu Gln Glu Glu Leu Ser Ser Tyr Gly Val Thr Phe Asn Phe
 610 615 620
 Met Phe Asp Ala Gly His Asp Arg Lys Ile Asp Leu Asp Asn Gly Trp
 625 630 635 640
 Ile Ile Asn Leu Gly Arg Gly Leu Asp Ile Phe Glu Lys Phe Ser Arg
 645 650 655
 Phe Ser Leu Ser Asn Ser Arg Gln Glu Asn Arg Arg Cys Lys Glu Phe
 660 665 670
 Ser Val Thr Tyr Met Tyr Lys
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<210> 9855

<211> 98

<212> PRT

<213> B.fragilis

<400> 9855

Ile Leu Arg Leu Pro Trp His Gln Ile Glu His Cys Ser Ser Lys Asp
 1 5 10 15
 Thr Ile Thr Gln Ala Met Thr Met Asp Ile Gly Phe Gly Asp Val Val
 20 25 30
 Thr Pro Lys Thr Ile Pro Leu Asp Tyr Ser Leu Leu Leu Lys His Leu
 35 40 45
 Pro Ile Ala Asn Ile Leu Val Tyr Ser Ile Glu Thr Val Ile Ala Glu
 50 55 60
 Lys Met His Thr Val Val Asp Leu Ala Asp Gln Ser Ser Arg Met Lys
 65 70 75 80
 Asp Tyr Tyr Glu Leu Tyr Gln Ile Leu Ser Ala Asn Gln Tyr Asp Val
 85 90 95
 Ser Val

<210> 9856

<211> 96

<212> PRT

<213> B.fragilis

<400> 9856

Ala Phe Val Cys Ile His Lys Ser Ser Phe Leu Ser Asn Lys Ile Val
 1 5 10 15
 Pro Ile Ala Gly Leu Lys Tyr Asp Lys Ala Val Ala Leu Gly Asn Ser
 20 25 30
 Val Leu Val Ser Phe Gly Lys Asn Phe Phe Leu Phe Gly Tyr Val Glu
 35 40 45
 Gln Ala Ile Ser Asn Arg Phe Ser Val Val Leu Tyr Ile Ile Thr Tyr
 50 55 60
 Ser Phe Ile Ser Arg Tyr Phe Ser Arg Val Phe Ala Ile Arg Ser Leu
 65 70 75 80
 Phe Ala Leu Ser Ile Asn Arg Val Arg Ser Arg Leu Gly Ser Ala Arg
 85 90 95

<210> 9857

<211> 89
 <212> PRT
 <213> B.fragilis

<400> 9857

Thr	Leu	Glu	Arg	Val	Leu	Ala	Tyr	Thr	Ser	Gln	Gln	Leu	Ala	Leu	Tyr
1				5					10					15	
Met	Lys	Glu	Asn	Gln	Phe	Asn	Gln	Leu	Tyr	Glu	His	Ile	Arg	Met	Phe
			20					25					30		
Gln	Tyr	Val	Thr	Glu	Glu	Glu	Cys	Gln	Leu	Ile	Gln	Asn	Pro	Val	Thr
		35					40					45			
Ile	Asp	Ser	Gln	Ile	Lys	Ser	Ile	Asp	Leu	Met	His	Phe	Gly	Trp	Asn
	50					55					60				
Ile	Gly	Asn	Ala	Phe	Gly	Lys	Pro	Arg	Leu	Gln	Thr	Ala	Thr	Phe	Ile
65					70					75					80
Lys	Lys	Val	Phe	Ala	His	Tyr	Ser	Pro							
					85										

<210> 9858
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 <212> PRT
 <213> B.fragilis

<400> 9858

Ile	Lys	Arg	Arg	Leu	Glu	Arg	Leu	Leu	Ser	Pro	Leu	Cys	Phe	His	Tyr
1				5					10					15	
Leu	Arg	Asn	Ile	Pro	Tyr	Phe	Cys	Gln	Ile	Ile	Ile	Tyr	Phe	Tyr	Ile
			20					25					30		
Gln	Asn	Thr	Thr	Met	Lys	His	Leu	Val	Ile	Cys	Ile	Ala	Leu	Leu	Thr
		35					40					45			
Val	Gly	Ala	Cys	Cys	Phe	Ala	Gln	Gln	Lys	Lys	Val	Ala	Ser	His	Lys
	50					55					60				
Ala	Thr	Ser	Gly	Asn	Pro	Val	Phe	Gln	Gly	Trp	Tyr	Ala	Asp	Pro	Glu
65					70					75					80
Gly	Ile	Ile	Tyr	Asp	Asp	Thr	Tyr	Trp	Ile	Phe	Pro	Thr	Trp	Ser	Asp
				85					90					95	
Leu	Tyr	Glu	Asn	Gln	Thr	Phe	Phe	Asp	Cys	Phe	Ser	Ser	Lys	Asp	Leu
			100					105					110		
Val	Asn	Trp	Thr	Lys	His	Ala	Ser	Val	Leu	Asp	Thr	Thr	Ala	Val	Lys
		115						120					125		
Trp	Ala	Lys	Lys	Ala	Met	Trp	Ala	Pro	Ser	Val	Ile	Arg	Lys	Asn	Gly
	130					135						140			
Lys	Tyr	Tyr	Ile	Phe	Phe	Gly	Ala	Asn	Asp	Val	His	Glu	Gly	Glu	Ile
145					150					155					160
Gly	Gly	Ile	Gly	Val	Ala	Val	Ser	Asp	Arg	Pro	Glu	Gly	Pro	Tyr	Lys
				165					170					175	
Asp	Leu	Leu	Gly	Lys	Pro	Leu	Ile	Asn	Glu	Ile	Val	Asn	Gly	Ala	Gln
			180					185					190		
Pro	Ile	Asp	Gln	Phe	Val	Tyr	Asn	Asp	Asn	Gly	His	Tyr	Tyr	Met	Tyr
		195					200						205		
Tyr	Gly	Gly	Trp	Gly	His	Cys	Asn	Val	Val	Gln	Leu	Asn	Asp	Asp	Phe
	210					215					220				
Thr	Gly	Leu	Val	Pro	Phe	Glu	Asp	Gly	Thr	Val	Tyr	Lys	Glu	Val	Thr
225					230						235				240
Pro	Glu	Asn	Tyr	Val	Glu	Gly	Pro	Phe	Met	Phe	Lys	Lys	Asp	Gly	Lys
				245					250					255	
Tyr	Tyr	Phe	Met	Trp	Ser	Glu	Gly	Gly	Trp	Gly	Gly	Pro	Asp	Tyr	Ser
			260					265					270		
Val	Ala	Tyr	Ala	Ile	Ser	Asp	Ser	Pro	Phe	Gly	Pro	Phe	Lys	Arg	Val

275 280 285
 Ala Lys Ile Leu Gln Gln Asp Thr Ser Val Ala Thr Ser Ala Gly His
 290 295 300
 His Ser Leu Leu His Ala Pro Gly Thr Asp Asp Tyr Tyr Ile Val Tyr
 305 310 315 320
 His Arg Arg Pro Leu Asn Asp Asn Ala Arg Asp His Arg Val Thr Cys
 325 330 335
 Ile Asp Lys Met Thr Phe Asp Lys Asp Gly Phe Ile Asn Pro Val Lys
 340 345 350
 Met Thr Phe Glu Gly Val Pro Ala Gln Lys Ile Lys Lys Ser Lys Lys
 355 360 365
 Lys

<210> 9859
 <211> 72
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<400> 9859
 Tyr Ile Glu Ser Ser Gly Ile Lys Asp Lys Cys Tyr Arg Gln Asp Gly
 1 5 10 15
 Ile Ser Lys Leu Thr Glu Ile Cys Arg Phe Phe Asp Leu Pro Asp Leu
 20 25 30
 Lys His Ile Tyr Leu Glu Lys Lys Asp Ile Ala Thr Ile Ala Asn Phe
 35 40 45
 Ala Ala Asn Gln Ile Leu Phe Ala Ser Gln Cys Phe Phe Leu Val His
 50 55 60
 Ser Leu Tyr Leu Phe Tyr Ile Ile
 65 70

<210> 9860
 <211> 127
 <212> PRT
 <213> B.fragilis

<400> 9860
 Met Met Thr Gly Thr Gly Ser Tyr Arg Ser Ile Leu Leu Gln Asn Leu
 1 5 10 15
 Ser Tyr Pro Phe Lys Arg Ser Glu Arg Ile Gly Asn Ser Ile Ser
 20 25 30
 Tyr Arg Val Ile Gly Thr Ser Pro Thr Thr Phe Thr Pro His Lys Ile
 35 40 45
 Val Phe Thr Val Phe Leu Glu His Lys Arg Thr Phe Asn Ile Val Leu
 50 55 60
 Arg Ser His Phe Phe Ile Asp Ser Ala Ile Phe Lys Arg Asn Glu Pro
 65 70 75 80
 Cys Lys Ile Ile Val Gln Leu Tyr Asn Ile Ala Met Pro Pro Thr Thr
 85 90 95
 Ile Ile His Ile Ile Met Ser Ile Ile Ile Val Tyr Lys Leu Ile Asp
 100 105 110
 Arg Leu Arg Ser Ile His Tyr Phe Ile Asn Gln Arg Leu Thr Gln
 115 120 125

<210> 9861
 <211> 660
 <212> PRT
 <213> B.fragilis

<400> 9861

Arg	Gly	Cys	Gly	Asn	Asn	Arg	Thr	Lys	Glu	Thr	Glu	Ile	Ile	Ile	Asn
1				5					10					15	
Lys	Arg	Ile	Thr	Ile	Met	Gly	Lys	Ile	Ile	Gly	Ile	Asp	Leu	Gly	Thr
		20					25						30		
Thr	Asn	Ser	Cys	Val	Ser	Val	Phe	Glu	Gly	Asn	Glu	Pro	Val	Val	Ile
	35					40					45				
Ala	Asn	Ser	Glu	Gly	Lys	Arg	Thr	Thr	Pro	Ser	Ile	Val	Ala	Phe	Val
	50				55						60				
Asp	Gly	Gly	Glu	Arg	Lys	Val	Gly	Asp	Pro	Ala	Lys	Arg	Gln	Ala	Ile
65				70					75					80	
Thr	Asn	Pro	Thr	Arg	Thr	Ile	Phe	Ser	Ile	Lys	Arg	Phe	Met	Gly	Glu
			85					90					95		
Asn	Trp	Asp	Gln	Val	Gln	Lys	Glu	Ile	Ala	Arg	Val	Pro	Tyr	Lys	Val
		100					105						110		
Val	Lys	Gly	Asp	Asn	Asn	Thr	Pro	Arg	Val	Asp	Ile	Asp	Gly	Arg	Leu
	115					120					125				
Tyr	Thr	Pro	Gln	Glu	Ile	Ser	Ala	Met	Ile	Leu	Gln	Lys	Met	Lys	Lys
	130				135						140				
Thr	Ala	Glu	Asp	Tyr	Leu	Gly	Gln	Glu	Val	Thr	Glu	Ala	Val	Ile	Thr
145				150					155					160	
Val	Pro	Ala	Tyr	Phe	Ser	Asp	Ser	Gln	Arg	Gln	Ala	Thr	Lys	Glu	Ala
			165					170					175		
Gly	Gln	Ile	Ala	Gly	Leu	Glu	Val	Lys	Arg	Ile	Val	Asn	Glu	Pro	Thr
		180					185						190		
Ala	Ala	Ala	Leu	Ala	Tyr	Gly	Leu	Asp	Lys	Ala	His	Lys	Asp	Met	Lys
	195					200					205				
Ile	Ala	Val	Phe	Asp	Leu	Gly	Gly	Gly	Thr	Phe	Asp	Ile	Ser	Ile	Leu
	210				215						220				
Glu	Phe	Gly	Gly	Gly	Val	Phe	Glu	Val	Leu	Ser	Thr	Asn	Gly	Asp	Thr
225				230					235					240	
His	Leu	Gly	Gly	Asp	Asp	Phe	Asp	Gln	Val	Ile	Ile	Asp	Trp	Leu	Val
			245					250					255		
Gln	Glu	Phe	Lys	Asn	Asp	Glu	Gly	Ala	Asp	Leu	Thr	Gln	Asp	Pro	Met
		260				265						270			
Ala	Met	Gln	Arg	Leu	Lys	Glu	Ala	Ala	Glu	Lys	Ala	Lys	Ile	Glu	Leu
	275					280						285			
Ser	Ser	Ser	Thr	Ser	Thr	Glu	Ile	Asn	Leu	Pro	Tyr	Ile	Met	Pro	Val
	290				295						300				
Gly	Gly	Val	Pro	Lys	His	Leu	Val	Lys	Thr	Leu	Thr	Arg	Ala	Lys	Phe
305				310					315					320	
Glu	Ser	Leu	Ala	His	Asn	Leu	Ile	Gln	Ala	Cys	Leu	Glu	Pro	Cys	Lys
			325					330					335		
Lys	Ala	Met	Gln	Asp	Ala	Gly	Leu	Ser	Asn	Ser	Asp	Ile	Asp	Glu	Val
		340					345					350			
Ile	Leu	Val	Gly	Gly	Ser	Ser	Arg	Ile	Pro	Ala	Val	Gln	Lys	Leu	Val
	355					360						365			
Glu	Asp	Phe	Phe	Gly	Lys	Thr	Pro	Ser	Lys	Gly	Val	Asn	Pro	Asp	Glu
	370				375						380				
Val	Val	Ala	Val	Gly	Ala	Ala	Val	Gln	Gly	Ala	Val	Leu	Thr	Asp	Glu
385				390					395					400	
Ile	Lys	Gly	Val	Val	Leu	Leu	Asp	Val	Thr	Pro	Leu	Ser	Met	Gly	Ile
			405					410					415		
Glu	Thr	Leu	Gly	Val	Met	Thr	Lys	Leu	Ile	Asp	Ala	Asn	Thr	Thr	
		420					425					430			
Ile	Pro	Ala	Arg	Lys	Ser	Glu	Thr	Phe	Ser	Thr	Ala	Ala	Asp	Asn	Gln
	435					440						445			
Thr	Glu	Val	Thr	Ile	His	Val	Leu	Gln	Gly	Glu	Arg	Pro	Met	Ala	Ala
	450					455					460				

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Gln Asn Lys Ser Ile Gly Gln Phe Asn Leu Thr Gly Ile Ala Pro Ala
 465 470 475 480
 Arg Arg Gly Val Pro Gln Ile Glu Val Thr Phe Asp Ile Asp Ala Asn
 485 490 495
 Gly Ile Leu Lys Val Ser Ala Lys Asp Lys Ala Thr Gly Lys Glu Gln
 500 505 510
 Ala Ile Arg Ile Glu Ala Ser Ser Gly Leu Ser Lys Glu Ile Glu
 515 520 525
 Lys Met Lys Ala Glu Ala Glu Ala Asn Ala Glu Ala Asp Lys Lys Glu
 530 535 540
 Arg Glu Lys Ile Asp Lys Leu Asn Gln Ala Asp Ser Leu Ile Phe Gln
 545 550 555 560
 Thr Glu Thr Gln Leu Lys Glu Leu Gly Asp Lys Leu Pro Ala Asp Lys
 565 570 575
 Lys Ala Pro Ile Glu Ala Ala Leu Gln Lys Leu Lys Asp Ala His Lys
 580 585 590
 Ala Gln Asp Met Thr Thr Ile Asp Ser Ala Met Ala Glu Leu Asn Thr
 595 600 605
 Ala Phe Gln Ala Ala Ser Ala Glu Met Tyr Ala Gln Ser Gly Ala Gln
 610 615 620
 Gly Gly Ala Gln Ala Gly Pro Asp Met Asn Ala Gly Gln Ser Asn Ala
 625 630 635 640
 Gly Gln Asn Asn Gly Lys Gln Asp Asp Asn Val Gln Asp Ala Asp Phe
 645 650 655
 Glu Glu Val Lys
 660

<210> 9862

<211> 196

<212> PRT

<213> B.fragilis

<400> 9862

Ile Ile Val Met Pro Ser Ser Ser Val Leu Ile Pro Arg Ile Cys Glu
 1 5 10 15
 Tyr Cys Asp Lys Pro Phe Met Ala Arg Ser Val Asn Thr Arg Phe Cys
 20 25 30
 Ser Thr Ile Cys Asn Asn Lys Ser Leu Arg Glu Arg Lys Lys Arg Glu
 35 40 45
 Lys Glu Glu Gln Arg Gln Ile Ser Leu Leu Asp Thr Lys Lys Asn Lys
 50 55 60
 Ile Ala Asp Ile Gln Thr Arg Pro Tyr Ile Ser Val Ser Glu Ala Ala
 65 70 75 80
 Gln Leu Ile Gly Val Ser Lys Ser Thr Ile Arg Arg Met Leu Cys Arg
 85 90 95
 Gly Met Leu Ala Gly Ala Asn Leu Gly Ile Arg Leu Thr Arg Ile Asp
 100 105 110
 Arg Thr Gln Leu Glu Gln Leu Phe Thr Ser Ile Ile Val Pro Glu Glu
 115 120 125
 Gln Ile Lys Pro Lys Phe Tyr Glu Leu Asp Lys Cys Tyr Thr Ile Gly
 130 135 140
 Glu Cys Leu Lys Lys Tyr Asn Ile Pro Glu Cys Arg Leu Glu Ser Ile
 145 150 155 160
 Ile Arg Ala Phe Asn Ile Pro Lys Arg Lys Val Gly Asn Tyr Val Tyr
 165 170 175
 Ile Pro Arg Ile Glu Ile Asp Arg Val Leu Asn Lys Ile Asp Gly Asn
 180 185 190
 Met Glu Asn Ala
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<210> 9863
 <211> 318
 <212> PRT
 <213> B.fragilis

<400> 9863

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Leu Ile Cys Ile Ser Lys Ala Lys Glu Asn Met Pro Tyr Pro Ile Glu
1      5      10      15
Asn Lys Leu Val Ile Ala Val Ala Ser Ala Leu Phe Asn Leu Ile
20     25     30
Glu Ser Asp Ser Val Phe Lys Thr Gln Gly Glu Ser Ile Tyr Arg Glu
35     40     45
Tyr Gln Glu Asn Arg Leu Asp Ile Pro Phe Glu Lys Gly Val Ala Phe
50     55     60
Pro Phe Ile Lys Arg Leu Leu Ser Leu Asn Gln Ser Phe Pro Glu Glu
65     70     75     80
Gln Pro Ile Glu Val Val Leu Leu Ser Arg Asn Ser Pro Glu Thr Gly
85     90     95
Leu Arg Val Phe Arg Ser Ile Gln Ser Tyr Gly Leu Asn Ile Ser Arg
100    105    110
Ala Tyr Phe Ser Ser Gly Gln Asn Asn Phe Gln Tyr Leu Pro Ala Phe
115    120    125
Asn Ala Ser Leu Phe Leu Ser Ala Asn Ser Asn Asp Thr Arg Ser Ala
130    135    140
Ile Glu Asn Gly Phe Ala Ala Gly Thr Val Leu Asn Lys Val Val Val
145    150    155    160
Asp Asp Asp Asp Asp Met Glu Leu Arg Ile Gly Phe Asp Phe Asp Gly
165    170    175
Val Leu Ala Asp Asp Ala Ser Glu Gln Val Tyr Lys Lys Ala Asn Gly
180    185    190
Asn Met Asn Glu Tyr Phe Glu His Glu Lys Glu His Ala Ala Asp Pro
195    200    205
Leu Ala Lys Gly Pro Ile Gly Asn Leu Leu Gln Lys Ile Ser Phe Phe
210    215    220
Gln Lys Met Glu Lys Lys Arg Ala Lys Ala Asp Pro Ala Tyr Arg Arg
225    230    235    240
Val Leu Lys Thr Ala Ile Ile Thr Ala Arg Asn Ala Pro Ala His Glu
245    250    255
Arg Val Ile Thr Thr Leu Lys Asn Trp Glu Val Glu Val Asp Asp Ala
260    265    270
Phe Phe Leu Gly Gly Ile Asp Lys Ala Arg Val Leu Asn Ile Leu Lys
275    280    285
Pro His Ile Phe Phe Asp Asp Gln Met Val His Leu Asn His Ile Asp
290    295    300
Lys Ile Pro Ala Val His Ile Pro Phe Gly Ile Ala Asn Lys
305    310    315

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<210> 9864
 <211> 62
 <212> PRT
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<400> 9864

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Ser Asp Ser Met Tyr Gln Lys Ile Asn Pro Leu Ile Ser Gly Glu Leu
1      5      10      15
Leu Thr Leu Ile Asn Val Leu Leu Tyr Ile Asp Ile Ala Asp Leu Asn
20     25     30
Gly Phe Glu Thr Leu Asn Phe Pro Ser His Leu Asp Val Leu Ser Arg

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35 40 45
 Tyr Ile Ala Asn Ser Asn Asp Thr Pro Asn Ser Val Ser Thr
 50 55 60

<210> 9865
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 9865
 Leu Arg Ile Leu Gly Ser Leu Gly Ile Leu Phe Val Phe Ile Phe Ile
 1 5 10 15
 Leu Ser Ile Leu Glu Pro Lys Met Ser Ile Met Thr Leu Thr Phe Glu
 20 25 30
 Cys Val Ser Ala Leu Ser Thr Val Gly Ser Ser Leu Asn Ala Thr Pro
 35 40 45
 Leu Leu Cys Asp Glu Ser Lys Leu Leu Val Ser Leu Leu Met Phe Ile
 50 55 60
 Gly Arg Val Gly Phe Ile Thr Leu Val Leu Gly Ile Val Lys Gln Lys
 65 70 75 80
 Lys Asn Thr Lys Tyr Arg Tyr Pro Ser Asp Asn Ile Ile Ile Asn
 85 90 95

<210> 9866
 <211> 396
 <212> PRT
 <213> B.fragilis

<400> 9866
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 Met Met Thr Arg Phe Ser Phe Val Leu Phe Ala Leu Ile Ser Leu Leu
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 Leu Thr Ala Cys Gln Asp Lys Gln Lys Val Val Ser Asn Thr Glu Asn
 35 40 45
 Gly Thr Ser Val Pro Leu Ser Tyr Ala Gln Gly Phe Gly Ile Thr His
 50 55 60
 Ser Ser Gly Tyr Thr Thr Ile Thr Val Tyr Asn Pro Trp Lys Pro Gly
 65 70 75 80
 Glu Ile Tyr Asp Thr Tyr Tyr Leu Val Lys Asn Glu Gly Gln Ala Val
 85 90 95
 Pro Thr Asp Gly Leu Lys Val Val Ile Pro Leu Lys Ser Ile Met Thr
 100 105 110
 Asn Ser Ala Thr His Leu Gly Phe Leu Glu Leu Leu Gly Glu Leu Asp
 115 120 125
 Lys Val Thr Gly Val Cys Asn Ser Asn Tyr Ile Tyr Asn Pro Thr Ile
 130 135 140
 Leu Gln Gly Val Lys Asp Gly Thr Ile Lys Asp Leu Gly Asp Ala Phe
 145 150 155 160
 Asn Leu Asp Ile Glu Asn Leu Leu Leu Leu His Pro Gln Ala Val Met
 165 170 175
 Thr Ser Ala Tyr Asn Ala Glu Asp Glu Asn Gly Arg Arg Met Lys Gln
 180 185 190
 Thr Gly Leu Pro Ile Leu Tyr Asn Ile Glu Trp Gln Glu Lys Ser Ile
 195 200 205
 Leu Gly Arg Ala Glu Trp Ile Lys Phe Ile Gly Ala Phe Phe Asp Lys
 210 215 220
 Glu Lys Leu Ala Asp Ser Ile Phe Ser Gln Ile Ala Glu Gln Tyr Asn
 225 230 235 240

Author	Year	Country	Sample Size	Study Design	Findings
Smith et al.	2015	USA	1,200	Longitudinal	Increased risk of depression in children of parents with mental illness.
Johnson et al.	2016	UK	800	Cross-sectional	Higher levels of anxiety in children of parents with anxiety disorders.
Lee et al.	2017	Canada	950	Case-control	Increased risk of substance use in children of parents with substance use disorders.
Kim et al.	2018	South Korea	1,500	Longitudinal	Higher levels of emotional and behavioral problems in children of parents with mental illness.
Wang et al.	2019	China	2,000	Cross-sectional	Increased risk of depression in children of parents with depression.
Miller et al.	2020	Australia	1,100	Longitudinal	Higher levels of anxiety in children of parents with anxiety disorders.
Chen et al.	2021	Taiwan	1,300	Cross-sectional	Increased risk of depression in children of parents with depression.
Nguyen et al.	2022	Vietnam	1,400	Longitudinal	Higher levels of emotional and behavioral problems in children of parents with mental illness.
Patel et al.	2023	India	1,600	Cross-sectional	Increased risk of depression in children of parents with depression.
Al-Sayid et al.	2024	Saudi Arabia	1,700	Longitudinal	Higher levels of anxiety in children of parents with anxiety disorders.
Al-Murayri et al.	2025	Qatar	1,800	Cross-sectional	Increased risk of depression in children of parents with depression.

<400> 9867

Lys 1	Gly	Ile	Met	Thr 5	Ala	Glu	Asp	Ile	Leu 10	Lys	Leu	Arg	Asp	Leu 15	Gly
Glu	Val	Ser	Lys 20	Met	Gln	Phe	Lys	Glu 25	Arg	Leu	Leu	Asp 30	Lys	Tyr	Asp
Ile	Gly	Cys 35	Glu	Ile	Val	Ala	Phe 40	Ser	Asn	Thr	His	Gly 45	Gly	Gln	Leu
Ile	Val 50	Gly	Ile	Asn	Asp	Lys 55	Thr	Gly	Lys	Ile	Asn 60	Pro	Leu	Ser	Phe
Gln 65	Glu	Val	Gln	Glu	Thr 70	Thr	Asn	Leu	Leu	Ser 75	Asn	Ile	Ala	Ser	Glu 80
Asn	Val	Val	Pro	Gly 85	Ile	Leu	Leu	Thr	Ile 90	Asp	Thr	Val	Ser	Ile 95	Glu
Gly	Gly	Thr	Ile 100	Ile	Val	Thr	Thr	Ile 105	Lys	Glu	Gly	Leu 110	Asn	Asn	Pro
Tyr	His	Asp 115	Asn	Lys	Gly	Ile	Val 120	Trp	Val	Lys	Asn 125	Gly	Ala	Asp	Lys
Arg	Lys 130	Val	Phe	Asp	Asn	Ala 135	Glu	Leu	Ala	Glu 140	Met	Met	Ser	Glu	Cys
Gly 145	Ser	Phe	Ile	Pro	Asp 150	Glu	Ala	Ala	Val	Asn 155	Asp	Ala	Thr	Ile	Asp 160
Asp	Leu	Asp	Glu	Lys 165	Thr	Leu	Lys	Leu	Phe 170	Leu	Ser	Asn 175	Lys	Phe	Glu
Thr	Ala	Leu	Lys 180	Thr	Lys	Gly	Met	Thr 185	Gly	Asp	Arg	Leu 190	Arg	Glu	Ala
Ser	Leu	Asp 195	Glu	Val	Cys	Ser	Thr 200	Ile	Val	Gln	Gly 205	His	Asp	Lys	Gln
Lys	Leu 210	Leu	Arg	Asn	Leu	His 215	Phe	Ile	Arg	Pro	Asp 220	Gly	Lys	Leu	Thr
Ile 225	Ala	Ala	Ile	Leu	Leu 230	Phe	Ala	Lys	Tyr	Pro 235	Gln	Arg	Trp	Leu	Pro 240
Val	Met	Thr	Ala	Lys 245	Cys	Ile	Ser	Phe	Val 250	Gly	Asn	Ser	Ile	Gly 255	Gly

Thr Gln Phe Arg Asp Lys Val Asn Asp Thr Asp Met Glu Gly Asn Leu
 260 265 270
 Leu His Gln Phe Glu Thr Ile Met Ser Phe Phe Thr Arg Asn Leu Arg
 275 280 285
 Thr Val Gln Val Lys Lys Glu Phe Asn Ser Met Gly Glu Leu Glu Ile
 290 295 300
 Pro Tyr Thr Cys Leu Val Glu Leu Val Val Asn Ala Leu Val His Arg
 305 310 315 320
 Ser Leu Asn Arg Lys Ala Pro Ile Arg Ile Phe Ile Phe Asp Asn Arg
 325 330 335
 Val Glu Ile His Ser Pro Gly Thr Leu Pro Asn Gly Leu Ser Val Asp
 340 345 350
 Asp Ile Ile Ala Gly Thr Ser Met Pro Arg Asn Asn Phe Leu Phe Ala
 355 360 365
 Asn Ala Ile Tyr Met Leu Pro Tyr Thr Gly Ala Gly Ser Gly Ile Gln
 370 375 380
 Arg Ala Leu Ser Gln Asp Lys Lys Leu Ser Phe Ser Asn Asn Glu Ser
 385 390 395 400
 Leu His Glu Phe Val Ile Thr Ile Glu Arg Asp Gly Val Ile Val Gly
 405 410 415
 Ala Asp Leu Asp Thr Ser Leu Gln Asn Ser Asp Ala Asn Leu Asp Thr
 420 425 430
 Leu Gln Gln Asp Leu Asp Thr Gln Gln Ala Ile Pro Ser Thr Asp Leu
 435 440 445
 Asp Thr Ser Gln Leu Asp Leu Asp Thr Gln Gln Ala Thr Ser Asn Thr
 450 455 460
 Ser Met Arg Ile Lys Leu Ser Asn Lys Gln Lys Asp Ile Val Asn Tyr
 465 470 475 480
 Cys Ser Val Pro Arg Ser Ser Lys Glu Ile Leu Glu Arg Ala Gly Ile
 485 490 495
 Ser Asn His Ser Lys Asn Arg Glu Lys Tyr Val Thr Phe Leu Val Glu
 500 505 510
 Ala Gly Tyr Leu Glu Met Thr Asn Pro Glu Asn Pro Thr Ala Ser Asn
 515 520 525
 Gln Lys Tyr Arg Lys Lys Leu Lys
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 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9868
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 Arg Trp Lys Ile Glu Met His Phe Ser Tyr Glu Arg Leu Gln Gly Ser
 35 40 45
 Phe Glu Lys Lys Thr Ala Pro Ala Pro Asp Ala Glu
 50 55 60

<210> 9869
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 <212> PRT
 <213> B.fragilis

<400> 9869
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Phe	Ile	Gly	Trp	Thr	Lys	Ala	Gln	Gln	Glu	Glu	Leu	Gln	Asn	Gly	Thr
		20						25					30		
Glu	Gln	Ser	Lys	Gln	Leu	Gln	Val	Phe	Gly	Arg	Asn	Ile	Phe	Ala	Ser
		35				40					45				
Arg	Asn	Leu	Ser	Phe	Glu	Pro	Asn	Leu	Asn	Ile	Pro	Thr	Pro	Glu	Asn
	50				55				60						
Tyr	Arg	Leu	Gly	Pro	Gly	Asp	Glu	Val	Ile	Ile	Asp	Val	Trp	Gly	Thr
65				70					75					80	
Ser	Glu	Asn	Thr	Val	Arg	Glu	Thr	Ile	Ser	Pro	Glu	Gly	Asn	Ile	Met
			85					90					95		
Val	Glu	Asn	Ile	Gly	Pro	Ile	Tyr	Leu	Ser	Gly	Met	Asn	Met	Glu	Glu
		100					105					110			
Ala	Glu	Arg	Tyr	Leu	Arg	His	Glu	Phe	Ser	Lys	Ile	Tyr	Ala	Ala	Ile
		115				120					125				
Ser	Gly	Glu	Ser	Ala	His	Ile	Lys	Val	Thr	Leu	Gly	Lys	Ile	Arg	Ser
	130				135					140					
Ile	Met	Val	Asn	Val	Met	Gly	Glu	Val	Glu	Val	Pro	Gly	Thr	Tyr	Arg
145				150					155					160	
Leu	Ser	Ala	Phe	Ala	Ser	Val	Phe	His	Ala	Leu	Tyr	Arg	Ala	Gly	Gly
			165				170						175		
Val	Asn	Arg	Ile	Gly	Ser	Leu	Arg	Thr	Ile	Gln	Val	Val	Arg	Ser	Gly
		180					185					190			
Met	Lys	Val	Ala	Asp	Val	Asp	Val	Tyr	Glu	Tyr	Ile	Met	Lys	Gly	Lys
	195				200						205				
Leu	Thr	Asp	Asp	Ile	Arg	Leu	Ser	Glu	Gly	Asp	Val	Ile	Leu	Val	Ser
	210				215					220					
Pro	Tyr	Glu	Asn	Leu	Val	Gly	Ile	Ser	Gly	Lys	Val	Lys	Arg	Pro	Met
225				230						235				240	
Ile	Tyr	Glu	Met	Lys	His	Gly	Glu	Ser	Leu	Ala	Thr	Leu	Ile	Gly	Tyr
			245				250						255		
Thr	Gly	Gly	Phe	Thr	Gly	Asp	Ala	Tyr	Arg	Asn	Thr	Val	Arg	Leu	Val
		260				265						270			
Arg	Arg	Ser	Gly	Arg	Glu	Lys	Gln	Ile	Tyr	Asn	Val	Asp	Gln	Gln	Asp
		275				280					285				
Tyr	Asp	Asn	Phe	Ile	Leu	Thr	Asp	Asn	Asp	Glu	Val	Ser	Val	Glu	Ala
	290				295					300					
Val	Leu	Gly	Arg	Phe	Ser	Asn	Lys	Val	Glu	Ile	His	Gly	Ala	Val	Tyr
305				310					315					320	
Arg	Ala	Gly	Met	Tyr	Gln	Leu	Asp	Ser	Val	Thr	Gly	Thr	Ile	Lys	Arg
			325				330						335		
Leu	Ile	Gln	Gln	Ala	Glu	Gly	Leu	Arg	Gly	Asp	Ala	Phe	Leu	Asn	Arg
		340				345						350			
Ala	Leu	Leu	Arg	Arg	Glu	Arg	Glu	Asp	Leu	Ser	His	Glu	Met	Ile	Pro
		355				360					365				
Val	Asp	Leu	Lys	Lys	Leu	Met	Glu	Gly	Thr	Ala	Pro	Asp	Leu	Pro	Leu
	370				375						380				
Gln	Lys	Asn	Asp	Val	Leu	Tyr	Ile	Ser	Ser	Ile	Lys	Glu	Leu	Glu	Glu
385				390						395				400	
Glu	Gly	Val	Leu	Phe	Ile	Tyr	Gly	Asp	Val	Ala	Lys	Pro	Gly	Tyr	Phe
			405				410						415		
Pro	Phe	Ala	Arg	Asn	Met	Ser	Val	Gln	Asp	Leu	Ile	Leu	Lys	Ala	Gly
		420					425					430			
Gly	Leu	Leu	Glu	Ser	Ala	Ser	Thr	Val	Arg	Ile	Asp	Val	Ser	Arg	Arg
	435					440					445				
Ile	Lys	Asp	Pro	Lys	Ser	Val	Ser	Ser	Ser	Thr	Val	Ile	Gly	Lys	Ser
	450				455					460					
Phe	Thr	Val	Glu	Leu	Lys	Asn	Gly	Leu	Leu	Ile	Gly	Glu	Ser	Asn	Thr
465				470						475				480	

Leu Lys Leu Glu Pro Tyr Asp Met Val Phe Val Arg Arg Ser Pro Gly
 485 490 495
 Tyr Gln Lys Gln Ala Asn Val Thr Val Asn Gly Glu Val Thr Phe Thr
 500 505 510
 Gly Asn Tyr Ala Leu Thr Lys Lys Asn Glu Arg Leu Ser Asp Leu Ile
 515 520 525
 Ala Lys Ala Gly Gly Leu Ser Lys Ser Ala Tyr Ala Lys Gly Ala Arg
 530 535 540
 Leu Met Arg Arg Met Thr Ala Asp Glu Ile Arg Gln Lys Gln Asp Ala
 545 550 555 560
 Val Arg Phe Ala Thr Lys Gly Thr Gly Lys Asp Ser Val Ser Leu Ser
 565 570 575
 Ser Leu Glu Val Asp Gln Thr Tyr Tyr Ser Val Gly Ile Glu Leu Glu
 580 585 590
 Lys Ala Leu Ala Lys Pro Lys Ser Asp Glu Asp Leu Val Leu Arg Glu
 595 600 605
 Gly Asp Val Leu Phe Val Pro Lys Tyr Val Ser Thr Val Thr Val Asn
 610 615 620
 Gly Ala Val Met Tyr Pro Asn Thr Val Leu Tyr Gln Lys Gly Ser Gly
 625 630 635 640
 Ile Asp Tyr Tyr Ile Gly Gln Ala Gly Gly Phe Gly Asn Arg Ala Leu
 645 650 655
 Lys Arg Arg Ala Tyr Val Val Tyr Met Asn Gly Thr Val Ser Arg Leu
 660 665 670
 Arg Arg Asn Thr Ala Asn Ala Ile Glu Pro Gly Cys Glu Ile Ile Val
 675 680 685
 Pro Ser Lys Gly Glu Arg Lys Lys Met Thr Thr Ala Gly Ala Val Gly
 690 695 700
 Met Ser Ser Ser Ile Ala Ser Ile Ala Ala Met Val Ala Ser Met Val
 705 710 715 720
 Ser Leu Thr Lys

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 <212> PRT
 <213> B.fragilis

<400> 9870
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 Lys Thr Trp Phe Val Glu Lys Ile Gly Lys Ser Phe Arg Tyr Thr Lys
 35 40 45
 Thr Asp Ala Cys Asn Tyr Cys His Pro Gly Leu Glu Gln Leu Ser Glu
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 Ile Ala Lys Ile Leu Leu Val Glu Pro Gln Lys Leu Tyr Ile
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 <211> 233
 <212> PRT
 <213> B.fragilis

<400> 9871
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 Gly His Val Leu Ala Glu Glu Leu Ser Thr Leu Gly His Glu Val Ile

[illegible]

<400> 9872

[illegible]

<400> 9873

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			20					25					30		
Val	Leu	Lys	Ile	Tyr	Asn	Trp	Ala	Asp	Tyr	Ile	Gly	Asp	Gly	Val	Leu
		35					40					45			

Glu Asp Phe Gln Ala Tyr Tyr Lys Glu Gln Thr Gly Glu Asp Ile Arg
 50 55 60
 Ile Val Tyr Gln Thr Phe Asp Ile Asn Glu Ile Met Leu Thr Lys Ile
 65 70 75 80
 Glu Lys Gly His Glu Asp Phe Asp Val Val Cys Pro Ser Glu Tyr Ile
 85 90 95
 Ile Glu Arg Met Leu Lys Lys Asp Leu Leu Leu Pro Ile Asp Thr Val
 100 105 110
 Phe Pro His Ser Pro Asp Tyr Met Asn Asp Val Ser Pro Tyr Ile Arg
 115 120 125
 Glu Gln Ile Asp Lys Leu Ser Gln Pro Gly Arg Val Ala Ser His Tyr
 130 135 140
 Ala Val Cys Tyr Met Trp Gly Thr Ala Gly Ile Leu Tyr Asn Lys Ala
 145 150 155 160
 Phe Val Pro Asp Ala Asp Ala Glu Ser Trp Ser Cys Leu Trp Asp Arg
 165 170 175
 Lys Tyr Ala Gly Lys Ile Leu Met Lys Asp Ser Tyr Arg Asp Ala Tyr
 180 185 190
 Gly Thr Ala Ile Ile Tyr Ala His Ala Arg Asp Leu Ala Gly Gly Lys
 195 200 205
 Val Thr Val Glu Asp Leu Met Asn Asp Tyr Ser Pro Arg Ala Met Glu
 210 215 220
 Ile Ala Glu Lys Tyr Leu Lys Ala Met Lys Pro Asn Ile Ala Gly Trp
 225 230 235 240
 Glu Ala Asp Phe Gly Lys Glu Met Met Thr Lys Asn Lys Ala Trp Leu
 245 250 255
 Asn Met Thr Trp Ser Gly Asp Ala Lys Trp Ala Ile Glu Glu Ala Asp
 260 265 270
 Ala Val Gly Val Asp Leu Asp Tyr Val Val Pro Arg Glu Gly Ser Asn
 275 280 285
 Ile Trp Tyr Asp Gly Trp Val Ile Pro Lys Tyr Ala Gly Asn Pro Glu
 290 295 300
 Ala Ala Ser Tyr Phe Ile Asn Phe Met Cys Arg Pro Asp Ile Ala Leu
 305 310 315 320
 Arg Asn Met Glu Ala Ser Gly Tyr Val Ser Ala Val Ala Ser Pro Glu
 325 330 335
 Ile Met Glu Ala Lys Thr Asp Thr Thr Leu Thr Tyr Tyr Ser Asp Leu
 340 345 350
 Ser Tyr Phe Phe Gly Pro Gly Ala Asp Ser Leu Gln Ile Asp Lys Ile
 355 360 365
 Gln Tyr Pro Asp Arg Lys Val Val Glu Arg Cys Ala Met Ile Arg Asp
 370 375 380
 Phe Gly Asp Lys Thr Lys Asp Val Leu Glu Ile Trp Ser Arg Ile Lys
 385 390 395 400
 Gly Asp Asn Leu Gly Val Gly Ile Thr Ile Leu Ile Phe Ile Val Val
 405 410 415
 Gly Leu Met Asn Gly Trp Met Ile Tyr Asn Gly Ile Gln Arg Phe Asn
 420 425 430
 Pro Lys Arg Leu Gln Arg Arg Arg Ser Arg Arg Arg Lys Lys Gln Arg
 435 440 445

<210> 9874

<211> 1069

<212> PRT

<213> B.fragilis

<400> 9874

Tyr Phe Cys Thr Arg Ser Asn Lys His Lys Tyr Phe Phe Ile Lys Asp
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Met Thr Leu Phe Thr Asn Ile Lys Ser Phe Asp Lys Ser Phe Leu Leu
 20 25 30
 Lys Leu Trp Leu Ser Leu Ile Leu Tyr Gln Leu Ser Val Cys Pro Val
 35 40 45
 Ser Ala Gln Lys Asp Thr Met Asp Ile Lys Asp Tyr Ile Leu Ile Ile
 50 55 60
 Asn Thr Tyr Thr Glu Ser Phe Pro Trp Ser Asn Arg Leu Ile Ser Thr
 65 70 75 80
 Ala Thr Asn Phe Val Lys Asp Asp Pro Lys Leu Ala Val Tyr Thr Glu
 85 90 95
 His Met Asn Met Ile Met Ile Asp Asn Asp Ser Ile Leu Asp Gln Phe
 100 105 110
 Lys Asp Ser Leu Phe Asp Arg Tyr Gly Ser His Arg Pro Arg Met Leu
 115 120 125
 Leu Leu Leu Gly Asn Ser Ser Leu Ile Leu Lys Asp Asp Leu Arg Lys
 130 135 140
 Met Trp Gly Asp Ile Pro Met Val Leu Cys Ala Gly Lys Asp Tyr Thr
 145 150 155 160
 Gly Pro Glu His Tyr Tyr Leu Thr Lys Gln Pro Ile Pro Leu Ser Glu
 165 170 175
 Arg Val Pro Leu Ala Glu Leu Ser Gln Ser Cys Asn Leu Thr Tyr Leu
 180 185 190
 Tyr Ala Asn Leu Tyr Ile His Glu Asn Val Glu Met Met Phe Arg Thr
 195 200 205
 Leu Pro Arg Met Lys Arg Phe Ile Tyr Val Gly Asp Glu Arg Phe Val
 210 215 220
 Asn Gln Val Asn Ser Gln Glu Ile Gln Glu Ile Leu Arg Thr Lys His
 225 230 235 240
 Pro Asp Val His Tyr Thr Phe Leu Ser Ser Arg Asp Ile Lys Lys Thr
 245 250 255
 Asn Gln Leu Ile Asp Ser Leu Asn Phe Val Asp Pro Arg Thr Thr Gly
 260 265 270
 Ile Leu Phe Ser Ser Trp Phe His Lys Arg Gln Phe Ala Gly Asn Met
 275 280 285
 Met Leu Thr Met Ile Leu Pro Glu Ile Val Ser Thr Val Ser Pro Pro
 290 295 300
 Ile Phe Ala Leu Asn Met Ile Glu Leu Asn Asp Lys Glu Ser Gly Met
 305 310 315 320
 Val Gly Gly Tyr Thr Tyr Asp Gln Asn His Phe Asn Glu Lys Leu Ser
 325 330 335
 Asn Met Phe Ser Glu Ile Leu Ser Gly Lys Ser Pro Arg Asp Leu Pro
 340 345 350
 His Tyr Leu Pro Thr Asp Gly Thr Pro Leu Ile Asn Tyr Gln Val Leu
 355 360 365
 Val Arg Lys Gly Leu Ser Pro Asp Glu Trp Pro Ala His Thr Arg Phe
 370 375 380
 Leu Asn Lys Pro Ile Thr Phe Trp Asp Lys Tyr Lys Tyr Phe Leu Pro
 385 390 395 400
 Gly Thr Thr Val Cys Ile Ala Leu Leu Val Trp Phe Phe Leu Tyr Arg
 405 410 415
 Ile Arg Thr Leu Thr His Leu Arg Gln Ile Gln Leu Lys Glu Ile Glu
 420 425 430
 Ala Met Ala Asn Tyr Lys Asn Leu Ile Asp Asn Met Pro Leu Leu Tyr
 435 440 445
 Met Gln Glu Lys Leu Ile Val Asn Glu Gln Gly Val Ala Asp Asp Leu
 450 455 460
 Ile Tyr Leu Asn Val Asn Pro His Phe Glu Lys His Phe Phe Arg Arg
 465 470 475 480
 Glu Asp Val Val Gly Lys Arg Ala Ser Glu Leu Phe Pro Glu Ser Leu

Category	Item	Value	Unit
Energy	Electricity	1000	kWh
	Gas	500	m ³
Water	Supply	1000	m ³
	Wastewater	500	m ³
Waste	Recycling	1000	kg
	Landfill	500	kg
Transport	Car	1000	km
	Bus	500	km
Communication	Internet	1000	MB
	Mobile Phone	500	MB
Health	Gym	1000	min
	Swimming	500	min
Education	Reading	1000	min
	TV	500	min

Arg Leu Phe Glu Ser Ile Leu Gly His Asp Tyr His Leu Ile His Ala
 965 970 975
 Trp Asp Gly Arg Glu Ala Val Glu Arg Phe Lys Arg Glu Asn Pro Gln
 980 985 990
 Ile Ile Leu Met Asp Ile Asn Met Pro Val Met Asp Gly Tyr Glu Ala
 995 1000 1005
 Thr Gln Glu Ile Arg Lys Tyr Ser Ala Lys Val Pro Ile Ile Ala Val
 1010 1015 1020
 Thr Ala Phe Ala Tyr Ala Ser Asp Glu Gln Arg Val Met Glu Asn Gly
 1025 1030 1035 1040
 Phe Asp Gly Tyr Met Pro Lys Pro Ile Asn Ala Arg Gln Leu Lys Ala
 1045 1050 1055
 Gln Ile Thr Glu Ile Met Gln Lys Arg Ile Ile Leu Leu
 1060 1065

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 <212> PRT
 <213> B.fragilis

<400> 9875

Val Thr Tyr Thr Lys Val Ile Pro Arg Asp Leu Cys Ile Ser Phe Asn
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 Ser Ile Cys Met Ser Leu Arg Ile Phe Arg Ser Arg Ala Ala Lys Gly
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 35 40 45
 Ala Thr Arg Cys Cys Cys Pro Pro Asp Ser Glu Ser Thr Ser Arg Tyr
 50 55 60
 Ser
 65

<210> 9876
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 9876

Ser Asn Ile Thr Glu Lys Phe Tyr Pro Glu Leu Lys Lys His Leu Ser
 1 5 10 15
 Leu His Lys Tyr Leu Phe Thr Lys His Thr Lys Ala Met Lys Lys Leu
 20 25 30
 Thr Tyr Leu Ala Val Ala Ala Val Ala Leu Gly Val Ala Ser Cys Asn
 35 40 45
 Thr Asn Lys Pro Gly Tyr Val Ile Thr Gly Thr Val Glu Gly Ala Ala
 50 55 60
 Asp Gly Asp Thr Val Phe Ile Gln Glu Arg Val Asn Arg Gln Phe Asn
 65 70 75 80
 Lys Leu Asp Thr Ala Ile Ile Ala Asn Gly Thr Phe Thr Phe Glu Gly
 85 90 95
 Ala Gln Asp Ser Val Val Asn Arg Tyr Ile Thr Tyr Ser Lys Asp Gly
 100 105 110
 Asp Gly Val Tyr Val Asp Phe Phe Leu Glu Asn Gly Lys Ile Lys Val
 115 120 125
 Asn Leu Ser Lys Asp Asp Lys Ser Ala Thr Gly Thr Pro Asn Asn Asp
 130 135 140
 Ala Tyr Gln Glu Ile Arg Asn Lys Ile Asn Ala Ile Asp Gln Lys Gln
 145 150 155 160
 Ala Ala Ile Tyr Gln Ala Met Gly Asp Ser Thr Leu Thr Asp Asp Gln

				165					170					175			
Lys	Met	Ala	Lys	Gln	Lys	Glu	Phe	Ser	Glu	Leu	Glu	Glu	Ala	Tyr	Ser		
			180					185					190				
Gln	Ala	Ile	Lys	Glu	Gly	Val	Gln	Lys	Asn	Ile	Thr	Asn	Pro	Val	Gly		
		195					200					205					
Ile	Met	Leu	Phe	Lys	Gln	Ser	Phe	Tyr	Glu	Asn	Ser	Thr	Glu	Asp	Asn		
	210				215						220						
Asp	Ala	Leu	Leu	Lys	Gln	Ile	Pro	Ala	Asn	Tyr	Gln	Asn	Asp	Glu	Thr		
225				230						235					240		
Ile	Val	Lys	Ile	Lys	Asp	Ile	Thr	Glu	Lys	Gln	Lys	Ala	Thr	Ala	Ala		
			245					250						255			
Gly	Gln	Lys	Phe	Ile	Asp	Phe	Glu	Met	Leu	Thr	Pro	Asp	Gly	Lys	Pro		
		260					265						270				
Val	Lys	Leu	Ser	Asp	Tyr	Val	Gly	Lys	Gly	Lys	Val	Val	Leu	Val	Asp		
	275						280					285					
Phe	Trp	Ala	Ser	Trp	Cys	Gly	Pro	Cys	Arg	Arg	Glu	Met	Pro	Asn	Ile		
	290				295						300						
Val	Glu	Ala	Tyr	Ala	Lys	Tyr	Lys	Gly	Lys	Asn	Phe	Glu	Ile	Val	Gly		
305				310						315					320		
Val	Ser	Leu	Asp	Gln	Asp	Ala	Asp	Lys	Trp	Lys	Asp	Ala	Ile	Lys	Lys		
			325					330						335			
Leu	Asn	Ile	Thr	Trp	Pro	Gln	Met	Ser	Asp	Leu	Lys	Gly	Trp	Gln	Asn		
		340					345							350			
Glu	Gly	Ala	Gln	Leu	Tyr	Ala	Val	Asn	Ser	Ile	Pro	His	Thr	Met	Leu		
	355					360						365					
Val	Asp	Ala	Asp	Gly	Thr	Ile	Leu	Ala	Arg	Gly	Leu	His	Gly	Glu	Lys		
	370				375						380						
Leu	Gln	Thr	Lys	Leu	Glu	Glu	Val	Leu	Asn	Lys							
385				390						395							

<210> 9877

<211> 204

<212> PRT

<213> B.fragilis

<400> 9877

Asn	Arg	Ser	Thr	Met	Asn	Ile	Ile	Ser	Asp	Ile	Leu	Tyr	Trp	Ile	Ser		
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Thr	Gly	Leu	Leu	Val	Pro	Asp	Ile	Val	Leu	Leu	Ile	Val	Leu	Phe	Gly		
		20						25					30				
Arg	Ala	Leu	Leu	Val	Gly	Ser	Phe	Tyr	Gly	Gln	Tyr	Leu	Ser	Ile			
	35				40					45							
Arg	Lys	Thr	Glu	Ala	Leu	Leu	Arg	Asn	Glu	Leu	Asn	Ala	Leu	Thr	Pro		
	50				55					60							
Ala	Thr	Val	Met	Glu	Leu	Ala	Asp	Lys	Leu	Pro	Glu	Lys	Ser	Ser	Ser		
65				70					75					80			
Leu	Val	Ile	Ser	Tyr	Ile	Arg	Gln	Val	Leu	Gln	Ala	His	Glu	Ser	Pro		
			85					90					95				
Ala	Gln	Ile	Gln	Arg	Leu	Leu	Ala	Asn	Phe	Glu	Ile	Ala	Ala	Asp	Lys		
		100					105					110					
Asp	Leu	Ala	Ile	Ser	Lys	Thr	Leu	Thr	Lys	Leu	Gly	Pro	Ile	Leu	Gly		
	115					120					125						
Leu	Met	Gly	Thr	Leu	Ile	Pro	Met	Gly	Pro	Ala	Leu	Ala	Gly	Leu	Ala		
	130				135					140							
Ser	Gly	Asp	Ile	Ala	Ser	Met	Ala	Tyr	Asn	Met	Gln	Ile	Ala	Phe	Ala		
145				150					155					160			
Thr	Thr	Val	Val	Gly	Leu	Val	Ala	Gly	Ala	Val	Gly	Phe	Leu	Thr	Gln		
			165					170					175				
Gln	Val	Lys	Gln	Arg	Trp	Tyr	Leu	Gln	Asp	Met	Thr	Asn	Leu	Glu	Phe		

180 185 190
 Leu Ser Glu Leu Leu Asn Glu Lys Arg Ala Ala Arg
 195 200

<210> 9878
 <211> 597
 <212> PRT
 <213> B.fragilis

<400> 9878

Tyr Cys Gln Thr Arg Ile Asn Lys Leu Lys Lys Tyr Met Ala Thr Lys
 1 5 10 15
 Gly Thr Val Ser Gly Val Ile Ala Asn Met Val Thr Leu Val Val Asp
 20 25 30
 Gly Pro Val Ala Gln Asn Glu Ile Cys Tyr Ile Ser Thr Gly Gly Asp
 35 40 45
 Lys Leu Met Ala Glu Val Ile Lys Val Val Gly Thr His Val Tyr Val
 50 55 60
 Gln Val Phe Glu Ser Thr Arg Gly Leu Lys Val Gly Ala Glu Ala Glu
 65 70 75 80
 Phe Thr Gly His Met Leu Glu Val Thr Leu Gly Pro Gly Met Leu Ser
 85 90 95
 Lys Asn Tyr Asp Gly Leu Gln Asn Asp Leu Asp Lys Met Asp Gly Val
 100 105 110
 Phe Leu Lys Arg Gly Gln Tyr Thr Tyr Pro Leu Asp Lys Gly Ser Val
 115 120 125
 Trp His Phe Val Pro Leu Val Ser Val Gly Asp Lys Val Glu Ala Ser
 130 135 140
 Ala Trp Leu Gly Gln Val Asp Glu Asn Phe Gln Pro Leu Lys Ile Met
 145 150 155 160
 Val Pro Phe Thr Gln Lys Gly Val Cys Thr Val Lys Ser Ile Val Pro
 165 170 175
 Glu Gly Asp Tyr Lys Ile Glu Asp Val Val Ala Val Leu Val Asp Glu
 180 185 190
 Glu Gly Asn Thr Val Glu Val Asn Met Ile Gln Lys Trp Pro Val Lys
 195 200 205
 Arg Ala Met Thr Asn Tyr Lys Glu Lys Pro Arg Pro Phe Lys Leu Leu
 210 215 220
 Glu Thr Gly Val Arg Val Ile Asp Thr Val Asn Pro Ile Val Glu Gly
 225 230 235 240
 Gly Thr Gly Phe Ile Pro Gly Pro Phe Gly Thr Gly Lys Thr Val Leu
 245 250 255
 Gln His Ala Ile Ser Lys Gln Ala Glu Ala Asp Ile Val Ile Ile Ala
 260 265 270
 Ala Cys Gly Glu Arg Ala Asn Glu Val Val Glu Ile Phe Thr Glu Phe
 275 280 285
 Pro Glu Leu Val Asp Pro His Thr Gly Arg Lys Leu Met Glu Arg Thr
 290 295 300
 Ile Ile Ile Ala Asn Thr Ser Asn Met Pro Val Ala Ala Arg Glu Ala
 305 310 315 320
 Ser Val Tyr Thr Ala Met Thr Ile Ala Glu Tyr Tyr Arg Ala Met Gly
 325 330 335
 Leu Lys Val Leu Leu Met Ala Asp Ser Thr Ser Arg Trp Ala Gln Ala
 340 345 350
 Leu Arg Glu Met Ser Asn Arg Met Glu Glu Leu Pro Gly Pro Asp Ala
 355 360 365
 Phe Pro Met Asp Leu Ser Ser Ile Ile Ser Asn Phe Tyr Gly Arg Ala
 370 375 380
 Gly Tyr Val Lys Leu Asn Asn Gly Glu Ser Gly Ser Ile Thr Phe Ile

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<210> 9879
<211> 198
<212> PRT
<213> B.fragilis
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[illegible]

195

<210> 9880
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 9880

Ser Ile Pro Ala Ser Ser Val Gly Arg Asn Val Ile Leu Lys Gly Cys
 1 5 10 15
 Val Met Ser Lys Tyr Tyr Tyr Leu Val Ala Gly Leu Pro Glu Leu Thr
 20 25 30
 Leu Glu Asp Ser Lys Leu Ser Tyr Thr Val Ala Asp Phe Lys Thr Glu
 35 40 45
 Ile Tyr Thr Gly Leu Ser Val Ser Asp Gln Arg Leu Ile Asp Leu Phe
 50 55 60
 Tyr Leu Lys Phe Asp Asn Ala Asn Val Leu Lys Phe Leu Lys Asp Lys
 65 70 75 80
 Glu Ala Ala Ile Asp Thr Arg Gly Asn Phe Ser Ala Glu Glu Leu Ala
 85 90 95
 Glu Tyr Ile Ser Thr Leu Lys Glu Gly Gly Glu Val Ser Ala Lys Glu
 100 105 110
 Phe Pro Ala Tyr Leu Ala Thr Phe Ile Ser Ala Tyr Phe Asn Thr Pro
 115 120 125
 Ala Glu Asn Ala Val Leu Leu Gly Asp His Leu Ala Leu Tyr Tyr
 130 135 140
 Asp Tyr Ala Met Lys Cys Gly Asn Lys Phe Val Ala Ser Trp Phe Glu
 145 150 155 160
 Phe Asn Leu Thr Ile Asn Asn Ile Leu Val Ala Leu Thr Ala Arg Lys
 165 170 175
 Tyr Lys Trp Asp Ile Ala Cys Asn Ile Val Gly Asp Thr Glu Ile Cys
 180 185 190
 Glu Ala Leu Arg Thr Ser Gly Ala Arg Asp Phe Gly Leu Ser Gly Glu
 195 200 205
 Val Asp Phe Leu Asp Gln Leu Val Lys Ile Ser Glu Ile Thr Glu Leu
 210 215 220
 Val Glu Arg Glu Lys Lys Leu Asp Ala Leu Arg Trp Asn Trp Met Glu
 225 230 235 240
 Asp Ala Ile Phe Phe Asp Tyr Phe Thr Ile Glu Arg Ile Phe Ala Phe
 245 250 255
 Leu Leu Lys Leu Glu Met Ile Glu Arg Trp Ile Ser Leu Asp Lys Glu
 260 265 270
 Arg Gly Asn Gln Leu Phe Arg Ser Ile Ile Glu Ser Leu Lys Asn Glu
 275 280 285
 Val Gln Ile Pro Ala Glu Phe Arg
 290 295

<210> 9881
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 9881

Asp Lys Ala Ala Glu Leu Thr Arg Leu Ala Cys Glu Ala Ala Lys Arg
 1 5 10 15
 His Gly Val Thr Val Ser Val Asp Leu Asn Phe Arg Lys Lys Leu Trp
 20 25 30
 Thr Lys Glu Lys Ala Gln Ser Ile Met Lys Pro Leu Met Lys Tyr Val
 35 40 45

Asp Val Cys Ile Gly Asn Glu Glu Asp Ala Glu Leu Cys Leu Gly Phe
 50 55 60
 Lys Pro Asp Ala Asp Val Glu Gly Gly His Thr Asp Ala Glu Gly Tyr
 65 70 75 80
 Lys Gly Ile Phe Arg Gln Met Met Asp Glu Phe Gly Phe Ser Tyr Val
 85 90 95
 Ile Ser Thr Leu Arg Glu Ser Phe Ser Ala Ser His Asn Gly Trp Lys
 100 105 110
 Ala Met Ile Tyr Asn Gly Glu Glu Phe Tyr Val Ser Arg His Tyr Asp
 115 120 125
 Ile Asp Pro Ile Ile Asp Arg Val Gly Gly Gly Asp Ser Phe Ser Gly
 130 135 140
 Gly Val Ile His Gly Leu Leu Thr Lys Arg Thr Gln Gly Glu Ala Leu
 145 150 155 160
 Glu Phe Ala Val Ala Ala Ser Ala Leu Lys His Thr Ile Asn Gly Asp
 165 170 175
 Phe Asn Leu Val Ser Val Ala Glu Val Glu Ala Leu Val Gly Gly Asp
 180 185 190
 Ala Ser Gly Arg Val Gln Arg
 195

<210> 9882

<211> 468

<212> PRT

<213> B.fragilis

<400> 9882

Met His Glu Ala Val Ser Val Asn Leu Tyr Ile Val Asp Ala Lys Leu
 1 5 10 15
 Pro Phe Phe Ser Leu Ser Phe Thr Ile Phe Ala Pro Gln Asn Phe Lys
 20 25 30
 Asn Tyr Ser Met Ile Asn Glu Glu Lys Ile His Lys Ser Thr Ser Gly
 35 40 45
 Trp Trp Ala Leu Ser Pro Leu Phe Val Phe Leu Cys Leu Tyr Leu Val
 50 55 60
 Thr Ser Ile Leu Val Asn Asp Phe Tyr Lys Val Pro Ile Thr Val Ala
 65 70 75 80
 Phe Leu Ile Ser Ser Cys Tyr Ala Ile Ala Ile Thr Arg Gly Leu Asn
 85 90 95
 Leu Glu Gln Arg Val Tyr Gln Phe Ser Val Gly Ala Ser Asn Lys Asn
 100 105 110
 Ile Met Leu Met Val Trp Ile Phe Ile Leu Ala Gly Ala Phe Ala Gln
 115 120 125
 Ser Ala Lys Gln Met Gly Ala Ile Asp Ala Thr Val Asn Leu Thr Leu
 130 135 140
 His Ile Leu Pro Asp Asn Leu Leu Leu Ala Gly Ile Phe Leu Ala Ser
 145 150 155 160
 Cys Phe Ile Ser Leu Ser Ile Gly Thr Ser Val Gly Thr Ile Val Ala
 165 170 175
 Leu Thr Pro Val Ala Ile Gly Leu Ala Glu Lys Thr Gly Ile Asp Leu
 180 185 190
 Pro Phe Met Val Ala Val Val Val Gly Gly Ser Phe Phe Gly Asp Asn
 195 200 205
 Leu Ser Phe Ile Ser Asp Thr Thr Ile Ala Ser Thr Lys Thr Gln Gly
 210 215 220
 Cys Val Met Arg Asp Lys Phe Arg Val Asn Ser Met Ile Val Val Pro
 225 230 235 240
 Ala Ala Leu Val Val Leu Gly Ile Tyr Ile Phe Gln Gly Leu Ser Val
 245 250 255

Ser Ala Pro Pro Leu Val Gln Glu Ile Glu Trp Val Lys Val Ile Pro
 260 265 270
 Tyr Leu Ile Val Leu Gly Thr Ala Ile Ala Gly Met Asn Val Met Leu
 275 280 285
 Val Leu Ile Ile Gly Ile Phe Thr Ser Gly Val Ile Gly Ile Ala Thr
 290 295 300
 Gly Ser Leu Gly Phe Phe Asp Trp Phe Gly Ala Met Gly Thr Gly Ile
 305 310 315 320
 Thr Gly Met Gly Glu Leu Ile Ile Ile Thr Leu Leu Ala Gly Gly Met
 325 330 335
 Leu Glu Thr Ile Arg Tyr Asn Gly Gly Ile Asp Phe Ile Ile Arg Lys
 340 345 350
 Leu Thr Arg His Val Asn Gly Lys Arg Gly Ala Glu Leu Ser Ile Ala
 355 360 365
 Ala Leu Val Ser Ile Ala Asn Leu Cys Thr Ala Asn Asn Thr Ile Ala
 370 375 380
 Ile Ile Thr Thr Gly Pro Ile Ala Lys Asp Ile Ala Lys Lys Phe Gln
 385 390 395 400
 Leu Asp Arg Arg Lys Thr Ala Ser Ile Leu Asp Thr Phe Ser Cys Leu
 405 410 415
 Ile Gln Gly Ile Ile Pro Tyr Gly Ala Gln Met Leu Ile Ala Ala Gly
 420 425 430
 Leu Ala Gln Ile Ser Pro Leu Ser Ile Ile Gly Asn Leu Tyr Tyr Pro
 435 440 445
 Phe Thr Met Gly Ile Cys Ala Leu Leu Ala Ile Leu Phe Arg Tyr Pro
 450 455 460
 Arg Lys Tyr Ser
 465

<210> 9883

<211> 304

<212> PRT

<213> B.fragilis

<400> 9883

Ser Ser Met Ala His Ser His Glu His His His Glu His Val His Glu
 1 5 10 15
 Leu Thr Ser Leu Asn Lys Ser Phe Ile Ile Gly Ile Thr Leu Asn Ile
 20 25 30
 Leu Phe Val Leu Val Glu Phe Gly Ile Gly Phe Tyr Tyr Asp Ser Leu
 35 40 45
 Gly Leu Leu Ser Asp Ala Gly His Asn Leu Gly Asp Val Ala Ser Leu
 50 55 60
 Val Leu Ala Met Leu Ala Phe Arg Leu Ala Lys Val His Pro Asn Ser
 65 70 75 80
 Arg Tyr Thr Tyr Gly Tyr Lys Lys Ser Thr Val Leu Val Ser Leu Leu
 85 90 95
 Asn Ala Val Ile Leu Leu Val Ala Val Gly Ile Ile Ile Thr Glu Ser
 100 105 110
 Ile Glu Lys Leu Phe His Pro Val Pro Val Glu Gly Ala Ala Ile Ala
 115 120 125
 Trp Thr Ala Gly Val Gly Val Val Ile Asn Ala Val Thr Ala Arg Leu
 130 135 140
 Phe Met Lys Asp Lys Glu Lys Asp Leu Asn Val Lys Gly Ala Tyr Leu
 145 150 155 160
 His Met Ala Ala Asp Thr Leu Val Ser Val Gly Val Val Ile Ser Gly
 165 170 175
 Ile Ile Ile Met Tyr Thr Gly Trp Thr Leu Val Asp Pro Ile Ile Gly
 180 185 190

Leu Val Ile Ala Val Ile Ile Val Ile Ser Thr Trp Ser Leu Leu His
 195 200 205
 Asp Ser Leu Arg Leu Ser Leu Asp Gly Val Pro Val Gly Ile Asp Ser
 210 215 220
 Glu Lys Ile Gly Arg Val Ile Leu Glu Gln Pro Gly Val Glu Ser Tyr
 225 230 235 240
 His His Leu His Ile Trp Ala Leu Ser Thr Thr Glu Thr Ala Leu Thr
 245 250 255
 Ala His Ile Val Ile Gly Asp Leu Arg Arg Met Glu Glu Val Lys Arg
 260 265 270
 Glu Val Lys His Glu Leu Glu His Val Gly Ile Thr His Ala Thr Leu
 275 280 285
 Glu Phe Glu Tyr Lys Gly Ala Cys Cys Glu Gly Glu Asp Cys Ile Ser
 290 295 300

<210> 9884
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 9884
 Phe Ile Tyr Tyr Ser Pro Gln Cys Cys Glu Glu Glu Trp Leu Tyr Pro
 1 5 10 15
 Phe Leu Lys Tyr Trp Tyr Leu Ala Tyr Cys Pro Leu Ser Val Gln Trp
 20 25 30
 Gln Ala Thr Gly Val Leu Tyr Ala Asn Gly Lys Asn Ser Met Gly Ile
 35 40 45
 Arg Leu Lys Asp Leu Ser Lys Leu Gly Tyr Arg Asp Asn Val Ala Arg
 50 55 60
 Ser Leu Ala Cys Tyr Ser Ser Arg Gln Ile Leu
 65 70 75

<210> 9885
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 9885
 Ser Thr Arg Tyr Pro Pro Ile Ala Gly Pro Lys Glu Thr Glu Ala Ala
 1 5 10 15
 Glu Ala Met Asp Gln Asn Pro Asn Ala Val Pro Arg Cys Ser Gly Gly
 20 25 30
 Asn Thr Ser Leu Thr Ile Ala Met Pro Thr Gly Arg Ser Met Pro His
 35 40 45
 Pro Lys Pro Ser Ile Thr Arg Gln Lys Ile Ser Ser Ser Met Val Asp
 50 55 60
 Glu Leu Pro His Met Lys Glu Pro Ala Val Asn Thr Ser Arg Asp Lys
 65 70 75 80
 Lys Tyr Ile Phe Leu
 85

<210> 9886
 <211> 865
 <212> PRT
 <213> B.fragilis

<400> 9886
 Val Phe Ile His Gln Gln Val Asn Asn Asn Ile Met Lys Ile Lys Val
 1 5 10 15

Ser Asn Val Asn Thr Pro Asn Trp Lys Glu Val Thr Val Lys Ser Arg
 20 25 30
 Val Pro Ala Glu Leu Glu Lys Leu Ser Glu Leu Ala Arg Asn Ile Trp
 35 40 45
 Trp Ala Trp Asn Tyr Glu Ala Thr Glu Leu Phe Arg Asp Leu Asp Pro
 50 55 60
 Thr Leu Trp Lys Glu Ala Gly Gln Asn Pro Val Leu Leu Leu Glu Arg
 65 70 75 80
 Met Ser Tyr Glu Lys Leu Glu Ala Leu Ser Lys Asp Lys Val Ile Leu
 85 90 95
 Lys Arg Met Asn Asp Val Tyr Ala Lys Phe Arg Asp Tyr Met Asp Val
 100 105 110
 Thr Pro Asp Asn Lys Arg Pro Ser Val Ala Tyr Phe Ser Met Glu Tyr
 115 120 125
 Gly Leu Asn His Val Leu Lys Ile Tyr Ser Gly Gly Leu Gly Val Leu
 130 135 140
 Ala Gly Asp Tyr Leu Lys Glu Ala Ser Asp Ser Asn Val Asp Leu Cys
 145 150 155 160
 Ala Val Gly Phe Leu Tyr Arg Tyr Gly Tyr Phe Thr Gln Thr Leu Ser
 165 170 175
 Met Asp Gly Gln Ile Ala Asn Tyr Glu Ala Gln Asn Phe Gly Gln
 180 185 190
 Leu Pro Ile Asp Arg Val Thr Asp Ala Asp Gly Lys Pro Leu Val Val
 195 200 205
 Asp Val Pro Tyr Met Asp Tyr Tyr Val His Ala Asn Val Trp Arg Val
 210 215 220
 Asn Val Gly Arg Val Ser Leu Tyr Leu Leu Asp Thr Asp Asn Glu Met
 225 230 235 240
 Asn Ser Glu Phe Asp Arg Pro Ile Thr His Gln Leu Tyr Gly Gly Asp
 245 250 255
 Trp Glu Asn Arg Leu Lys Gln Glu Ile Leu Leu Gly Ile Gly Gly Met
 260 265 270
 Leu Thr Leu Lys Ala Leu Gly Ile Lys Lys Asp Ile Tyr His Cys Asn
 275 280 285
 Glu Gly His Ala Ala Leu Ile Asn Val Gln Arg Ile Cys Asp Tyr Val
 290 295 300
 Ala Thr Gly Leu Thr Phe Asn Gln Ala Ile Glu Leu Val Arg Ala Ser
 305 310 315 320
 Ser Leu Tyr Thr Val His Thr Pro Val Pro Ala Gly His Asp Tyr Phe
 325 330 335
 Asp Glu Gly Leu Phe Gly Lys Tyr Met Gly Gly Tyr Pro Val Lys Met
 340 345 350
 Gly Ile Ser Trp Asp Asp Leu Met Asp Leu Gly Arg Asn Asn Pro Gly
 355 360 365
 Asp Lys Gly Glu Arg Phe Cys Met Ser Val Phe Ala Cys Asn Thr Ser
 370 375 380
 Gln Glu Val Asn Gly Val Ser Trp Leu His Gly Lys Val Ser Gln Glu
 385 390 395 400
 Met Phe Ser Ser Ile Trp Lys Gly Tyr Phe Pro Glu Glu Ser His Val
 405 410 415
 Gly Tyr Val Thr Asn Gly Val His Phe Pro Thr Trp Ser Ala Thr Glu
 420 425 430
 Trp Lys Gln Leu Tyr Ala Lys Tyr Phe Asn Glu Asn Phe Leu Tyr Asp
 435 440 445
 Gln Ser Asn Pro Lys Ile Trp Glu Ala Ile Tyr Asn Val Pro Asp Glu
 450 455 460
 Glu Ile Trp Lys Thr Arg Val Thr Met Lys Asn Lys Leu Val Asp Tyr
 465 470 475 480
 Ile Arg Lys Gln Phe Arg Glu Thr Trp Leu Lys Asn Gln Gly Asp Pro

[illegible]

<400> 9887

Leu Lys Gln Gln Asn Ile Leu Ser Tyr Met Lys Ile Asn Ser Leu Leu
1 5 10 15
Ile Ala Ile Thr Leu Leu Gly Thr Met Leu Ile Ser Phe Ser Ala Cys

	20		25		30
Asn Gly Ile Leu Ser Ser Leu Tyr Asp Glu Pro Glu Thr Ala Lys Asp					
	35		40		45
Phe Gly Phe Ile Thr Ile Asp His Ala Asn His Ser Gly Thr Val Arg					
	50		55		60
Val Asp Ala Thr Gln Tyr Thr Lys Trp Asn Tyr Ile Asn Leu His Thr					
65		70		75	80
Leu Gln Ile Asp Ser Ala Lys Val Thr Ala Glu Gly Ala Asp Asp Pro					
	85		90		95
Asp Thr Trp Asp Leu Ala Ile His Arg Tyr Asp Val Lys Thr Asn Gly					
	100		105		110
Gly Glu Val Leu Glu Thr Asp Tyr Gln Ser Leu Ser Ala Leu Lys Asn					
	115		120		125
Ala Gly Ser Met Pro Gln Gly Ile Phe Val Ala Asp Glu Trp Thr Thr					
	130		135		140
Asn Lys Ile Ala Val Asp Val Ser His Met Met Glu Asp Asn Gly Tyr					
145		150		155	160
Leu Ile Tyr Ala Pro Ser Asp Phe Asn Pro Glu Leu Ser Lys Trp Leu					
	165		170		175
Asn Val Asp Thr Ser Glu Met Pro Pro Ile Tyr Thr Pro Ser Asn Lys					
	180		185		190
Val Tyr Leu Leu Arg Met Lys Asp Gly Thr Met Ala Ala Ile Arg Leu					
	195		200		205
Val Ser Tyr Met Asn Ala Ala Gly Ile Lys Gly Tyr Met Thr Phe Asp					
	210		215		220
Tyr Ile Tyr Pro Tyr Glu Pro					
225		230			

<210> 9888

<211> 356

<212> PRT

<213> B.fragilis

<400> 9888

Thr Asn Lys Gln Glu Asn Asp Met Glu Thr Lys Lys Leu Lys Lys Asn					
1	5		10		15
Ala Leu Phe Asn Pro Glu Gly Asp Thr Glu Thr Arg Leu Arg Lys Met					
	20		25		30
Ile Gly Gly Asn Thr Thr Asn Leu Asn Asp Phe Asn Asn Met Arg Tyr					
	35		40		45
Lys Trp Val Ser Asp Trp Tyr Arg Gln Ala Met Asn Asn Phe Trp Ile					
	50		55		60
Pro Glu Glu Ile Asn Leu Thr Gln Asp Thr Lys Asp Tyr Pro His Leu					
65		70		75	80
Thr Pro Ala Glu Arg Thr Ala Tyr Asp Lys Ile Leu Ser Phe Leu Val					
	85		90		95
Phe Leu Asp Ser Leu Gln Ser Asn Asn Leu Pro Thr Leu Ser Glu Tyr					
	100		105		110
Ile Thr Ala Asn Glu Val Asn Leu Cys Leu His Ile Gln Ala Phe Gln					
	115		120		125
Glu Cys Val His Ser Gln Ser Tyr Ser Tyr Met Leu Asp Ser Ile Cys					
	130		135		140
Ser Pro Glu Glu Arg Asn Asp Ile Leu Tyr Gln Trp Lys Thr Asp Glu					
145		150		155	160
His Leu Leu Arg Arg Asn Thr Phe Ile Gly Asn Cys Tyr Asn Glu Phe					
	165		170		175
Gln Glu Asn Arg Asp Gly Phe Ala Leu Ile Lys Thr Leu Ile Ala Asn					
	180		185		190
Tyr Ile Leu Glu Gly Ile Tyr Phe Tyr Ser Gly Phe Met Phe Phe Tyr					

195	200	205
Asn Leu Ser Arg	Asn Gly Lys Met Ser Gly Ser Ala Gln Glu Ile Arg	
210	215	220
Tyr Ile Asn Arg Asp	Glu Asn Thr His Leu Trp Leu Phe Arg Asn Ile	
225	230	235
Ile Leu Glu Leu Lys	Lys Glu Glu Pro Glu Leu Phe Thr Pro Asp Lys	240
	245	250
Val Lys Val Tyr	Glu Glu Met Met Arg Glu Gly Val Lys Gln Glu Ile	255
	260	265
Ala Trp Gly Gln Tyr Val Ile	Gly Asp Gln Ile Gln Gly Leu Asn Arg	270
	275	280
Gln Met Ile Ser Asp Tyr Ile His Phe Leu Gly Asn Leu Arg Trp Ser		285
	290	295
Ser Leu Gly Tyr Thr Pro Leu Tyr Glu Asp Asn Arg Lys Glu Pro Glu		300
305	310	315
Ser Met His Trp Val Ser Gln Tyr Ser Asn Ala Asn Met Val Lys Thr		320
	325	330
Asp Phe Phe Glu Ala Lys Ser Thr Ala Tyr Ala Lys Ser Thr Ala Leu		335
	340	345
Glu Asp Asp Leu		350
	355	

<210> 9889

<211> 403

<212> PRT

<213> B.fragilis

<400> 9889

Ser His Tyr Lys Asn Asn Lys Asn Met Arg Gln Thr Ile Ala Ser Lys	
1	5
Thr Pro Arg Ile Glu Val Val Asp Ala Leu Arg Gly Phe Ala Val Met	10
	15
	20
Ala Ile Leu Leu Val His Asn Leu Glu His Phe Ile Phe Pro Val Tyr	25
	30
	35
Pro Ala Ala Ala Ser Gln Pro Gly Trp Leu Asn Ile Leu Asp Glu Gly	40
	45
	50
Val Phe Ser Val Thr Phe Ser Leu Phe Ala Gly Lys Ala Tyr Ala Ile	55
65	60
	65
Phe Ala Leu Leu Phe Gly Leu Thr Phe Tyr Ile Gln Tyr Thr Asn Gln	70
	75
	80
	85
Gln Lys Lys Gly Lys Asp Phe Gly Tyr Arg Phe Leu Trp Arg Leu Leu	90
	95
	100
Leu Leu Gly Gly Phe Ala Thr Leu Asn Ala Ala Phe Phe Pro Ala Gly	105
	110
	115
Asp Val Leu Leu Leu Phe Cys Val Val Gly Ile Phe Leu Phe Ile Val	120
	125
	130
Arg Lys Trp Ser Asp Arg Thr Val Phe Ile Leu Ala Ile Phe Leu Leu	135
145	140
	145
Leu Gln Pro Val Glu Trp Tyr His Tyr Val Met Asn Leu Phe Asn Pro	150
	155
	160
	165
Ala His Ser Leu Pro Asp Leu Gly Val Gly Gln Met Tyr Gly Glu Val	170
	175
	180
Ala Glu Tyr Thr Lys Glu Gly Asp Phe Trp Lys Phe Ile Trp Gly Asn	185
	190
	195
Val Thr Leu Gly Gln Lys Ala Ser Leu Phe Trp Ala Ile Gly Ala Gly	200
	205
	210
Arg Phe Leu Gln Thr Ala Gly Leu Phe Leu Leu Gly Met Leu Ile Gly	215
225	220
	225
Arg Lys Gln Leu Phe Val Ala Ser Glu Ala Thr Ile Arg Phe Trp Val	230
	235
	240

[illegible]

<400> 9890

Ile	Val	Asn	Asn	Asn	Met	Ala	Thr	Lys	Ala	Phe	Gln	Lys	Ile	Tyr	Thr
1				5					10					15	
Lys	Ile	Thr	Gln	Ile	Thr	Lys	Ala	Thr	Cys	Ser	Leu	Lys	Ala	Thr	Gly
			20					25					30		
Val	Gly	Tyr	Asp	Glu	Leu	Ala	Thr	Val	Asn	Gly	Lys	Leu	Ala	Gln	Val
			35				40					45			
Val	Lys	Ile	Ala	Gly	Asp	Glu	Val	Thr	Leu	Gln	Val	Phe	Glu	Gly	Thr
			50			55					60				
Glu	Gly	Ile	Pro	Thr	Asn	Ala	Glu	Val	Val	Phe	Leu	Gly	Lys	Ser	Pro
65					70					75				80	
Thr	Leu	Lys	Val	Ser	Glu	Gln	Leu	Ala	Gly	Arg	Phe	Phe	Asn	Ala	Phe
				85					90					95	
Gly	Asp	Pro	Ile	Asp	Gly	Gly	Pro	Glu	Ile	Glu	Gly	Gln	Glu	Val	Pro
			100					105					110		
Ile	Gly	Gly	Pro	Ser	Val	Asn	Pro	Val	Arg	Arg	Lys	Gln	Pro	Ser	Glu
			115				120					125			
Leu	Ile	Ala	Thr	Gly	Ile	Ala	Gly	Ile	Asp	Leu	Asn	Asn	Thr	Leu	Val
			130			135					140				
Ser	Gly	Gln	Lys	Ile	Pro	Phe	Phe	Ala	Asp	Pro	Asp	Gln	Pro	Phe	Asn
145					150					155				160	
Gln	Val	Met	Ala	Asn	Val	Ala	Leu	Arg	Ala	Glu	Thr	Asp	Lys	Ile	Ile
				165					170					175	
Leu	Gly	Gly	Met	Gly	Met	Thr	Asn	Asp	Asp	Tyr	Leu	Tyr	Phe	Lys	Asn
			180					185					190		
Val	Phe	Ser	Asn	Ala	Gly	Ala	Leu	Asp	Arg	Ile	Val	Ser	Phe	Val	Asn
			195				200					205			
Thr	Thr	Glu	Asn	Pro	Pro	Val	Glu	Arg	Leu	Leu	Val	Pro	Asp	Met	Ala
			210			215					220				
Leu	Thr	Ala	Ala	Glu	Tyr	Phe	Ala	Val	Gln	His	Asn	Gln	Lys	Val	Leu
225					230				235					240	
Val	Leu	Leu	Thr	Asp	Met	Thr	Ser	Tyr	Ala	Asp	Ala	Leu	Ala	Ile	Val

			245					250					255		
Ser	Asn	Arg	Met	Asp	Gln	Ile	Pro	Ser	Lys	Asp	Ser	Met	Pro	Gly	Ser
			260						265				270		
Leu	Tyr	Ser	Asp	Leu	Ala	Lys	Ile	Tyr	Glu	Lys	Ala	Val	Gln	Phe	Pro
		275							280				285		
Asp	Gly	Gly	Ser	Ile	Thr	Ile	Ile	Ala	Val	Thr	Thr	Leu	Ser	Gly	Gly
	290					295						300			
Asp	Ile	Thr	His	Ala	Val	Pro	Asp	Asn	Thr	Gly	Tyr	Ile	Thr	Glu	Gly
305					310					315					320
Gln	Leu	Phe	Leu	Arg	Arg	Asp	Ser	Asp	Ile	Gly	Lys	Val	Ile	Val	Asp
			325						330					335	
Pro	Phe	Arg	Ser	Leu	Ser	Arg	Leu	Lys	Gln	Leu	Val	Thr	Gly	Lys	Lys
			340						345				350		
Thr	Arg	Lys	Asp	His	Pro	Gln	Val	Met	Asn	Ala	Ala	Val	Arg	Leu	Tyr
		355					360					365			
Ala	Asp	Ala	Ala	Asn	Ala	Lys	Thr	Lys	Leu	Glu	Asn	Gly	Phe	Asp	Leu
	370					375						380			
Thr	Asn	Tyr	Asp	Glu	Arg	Thr	Leu	Ala	Phe	Ala	Lys	Asp	Tyr	Ser	Asn
385					390					395					400
Gln	Leu	Leu	Ala	Ile	Asp	Val	Asn	Leu	Asp	Thr	Thr	Glu	Met	Leu	Asp
			405						410					415	
Val	Ala	Trp	Gly	Leu	Phe	Gly	Lys	Tyr	Phe	Arg	Pro	Glu	Glu	Val	Asn
		420						425					430		
Ile	Lys	Lys	Glu	Leu	Val	Asp	Gln	Tyr	Trp	Lys	Lys				
		435					440								

<210> 9891

<211> 405

<212> PRT

<213> B.fragilis

<400> 9891

Gln	Leu	Ile	Lys	Leu	Thr	Pro	Asn	Lys	Phe	Arg	Val	Arg	Thr	Gln	Arg
1				5					10					15	
Tyr	Val	Asn	Phe	Gln	Asp	Tyr	Lys	Asn	Cys	Tyr	Ile	Phe	Val	Ser	Ile
		20						25					30		
Glu	Ile	Lys	Leu	Leu	Val	Cys	Pro	Gly	Thr	Lys	Pro	His	Thr	Asn	Lys
	35						40					45			
Gly	Glu	Arg	Met	Asn	Lys	Leu	Pro	Glu	Arg	Ile	Arg	Ile	Lys	Asp	Ile
	50					55					60				
Ala	Arg	Leu	Ala	Asn	Val	Ser	Val	Gly	Thr	Val	Asp	Arg	Val	Leu	His
65					70					75					80
Gly	Arg	Ser	Gly	Val	Ser	Glu	Ala	Ser	Arg	Lys	Arg	Val	Glu	Glu	Ile
			85						90				95		
Leu	Lys	Gln	Leu	Asp	Tyr	Gln	Pro	Asn	Met	Tyr	Ala	Ser	Ala	Leu	Ala
		100						105					110		
Ser	Asn	Lys	Lys	Tyr	Thr	Phe	Ala	Cys	Leu	Leu	Pro	Lys	His	Leu	Glu
	115						120					125			
Gly	Glu	Tyr	Trp	Thr	Asp	Val	Gln	Lys	Gly	Ile	Arg	Glu	Ala	Val	Thr
	130					135					140				
Thr	Tyr	Ser	Asp	Phe	Asn	Ile	Ser	Ala	Asn	Ile	Thr	His	Tyr	Asp	Pro
145					150					155					160
Tyr	Asp	Tyr	Asn	Ser	Phe	Val	Ala	Thr	Ser	Gln	Ala	Val	Ile	Glu	Glu
			165						170					175	
Gln	Pro	Asp	Gly	Val	Met	Phe	Ala	Pro	Thr	Val	Pro	Gln	Tyr	Thr	Lys
		180						185					190		
Gly	Phe	Thr	Asp	Ala	Leu	Asn	Glu	Leu	Gly	Ile	Pro	Tyr	Ile	Tyr	Ile
		195					200					205			
Asp	Ser	Gln	Ile	Lys	Asp	Ala	Pro	Pro	Leu	Ala	Phe	Phe	Gly	Gln	Asn

210	215	220
Ser His Gln Ser Gly Tyr Phe Ala Ala Arg Met Leu Met Leu Leu Ala		
225	230	235
Val Asn Asp Arg Glu Ile Val Ile Phe Arg Lys Ile His Glu Gly Val		240
	245	250
Ile Gly Ser Asn Gln Gln Glu Ser Arg Glu Ile Gly Phe Arg Gln Tyr		255
	260	265
Met Gln Glu His His Pro Ala Cys Asn Ile Leu Glu Leu Asn Leu His		270
	275	280
Ala Asp Leu Asn Ile Glu Asp Ser Arg Met Leu Asp Asp Phe Phe Arg		285
	290	295
Glu His Pro Asp Val Lys His Gly Ile Thr Phe Asn Ser Lys Val Tyr		300
305	310	315
Ile Ile Gly Glu Tyr Leu Gln Gln Arg Arg Lys Ser Asp Phe Ser Leu		320
	325	330
Ile Gly Tyr Asp Leu Leu Glu Arg Asn Val Thr Cys Leu Lys Glu Gly		335
	340	345
Thr Val Ser Phe Leu Ile Ala Gln Gln Pro Glu Leu Gln Gly Phe Asn		350
	355	360
Ser Ile Lys Thr Leu Cys Asp His Leu Ile Phe Arg Lys Glu Val Ala		365
	370	375
Cys Thr Asn Tyr Met Pro Ile Asp Leu Leu Thr Lys Glu Asn Ile Asp		380
385	390	395
Tyr Tyr His Ser Lys		400
	405	

<210> 9892
 <211> 599
 <212> PRT
 <213> B.fragilis

<400> 9892
Arg Gln Ile Lys Ile Asn Met Gln Arg Leu Leu Lys Ser Ala Tyr Cys
1 5 10 15
Phe Phe Ala Ala Leu Leu Leu Thr Thr Ala Ala Ala Ala Gln His Lys
20 25 30
Ile Ser Gly Arg Val Ile Asp Thr Thr Gln Glu Pro Leu Val Gly Ala
35 40 45
Thr Ile Thr Leu Lys Glu Lys Pro Ser Val Gly Thr Thr Thr Asp Thr
50 55 60
Glu Gly Arg Tyr Thr Leu Thr Leu Pro Asp Gln Lys Glu Tyr Thr Val
65 70 75 80
Gln Val Ser Phe Val Gly Tyr Val Thr Ala Thr Lys Lys Thr Thr Ala
85 90 95
Ala Arg Gln Ser Arg Leu Asp Phe Ile Leu Lys Glu Asp Gln Met Asn
100 105 110
Leu Ser Thr Val Val Ile Thr Gly Thr Arg Thr Pro Lys Leu Leu Lys
115 120 125
Asp Ala Pro Ile Ile Thr Arg Val Ile Thr Ala Gly Asp Leu Lys Lys
130 135 140
Val Asp Ala Thr His Ile Gly Gln Leu Leu Gln Val Glu Leu Pro Gly
145 150 155 160
Ile Glu Phe Ser Tyr Ser Met Asp Gln Gln Val Lys Leu Asn Met Gln
165 170 175
Gly Phe Gly Gly Asn Ala Val Leu Phe Leu Val Asp Gly Glu Arg Leu
180 185 190
Ala Gly Glu Thr Leu Asp Asn Ile Asp Tyr Asn Arg Leu Asn Leu Asp
195 200 205
Asn Val Glu Arg Val Glu Ile Val Lys Gly Ala Ala Ser Thr Leu Tyr

210		215		220
Gly Ser Ser Ala Ile	Gly Gly Val Ile Asn Ile	Ile Thr Lys Ala Ser		
225	230	235	240	
Asp Asp Pro Trp Asn	Leu Asn Leu Asn Thr Arg Phe Gly Val His Asn			
	245	250	255	
Asp Gln Arg His	Gly Gly Thr Val Gly Phe Asn Ala Gly Lys Phe Tyr			
	260	265	270	
Ser Gln Thr Asn Val	Gln Tyr Thr Asn Ile Asp Ser Tyr Asn Val Lys			
	275	280	285	
Gln Gly Asp Tyr Thr	Thr Ile Asn Gly Asn Lys Thr Trp Asn Val Lys			
	290	295	300	
Glu Arg Leu Met Phe	Thr Pro Asn Glu Gln Leu Arg Leu Thr Ala Arg			
305	310	315	320	
Ala Gly Tyr Tyr Phe	Arg Glu Arg Asp Ala Ser Ser Glu Thr Lys Asn			
	325	330	335	
Arg Tyr Arg Gly Phe	Ser Gly Gly Leu Lys Gly Asn Tyr Asp Phe Asn			
	340	345	350	
Thr Lys Ser Asn Leu	Glu Leu Ala Tyr Thr Phe Asp Gln Tyr Asp Lys			
	355	360	365	
Ser Asp Tyr Leu Val	Ser Tyr Lys Asn Asp Ile Arg Asp Tyr Ser Asn			
	370	375	380	
Val Gln His Ser Val	Arg Ala Leu Tyr Asn Tyr Thr Phe Asn Asp Lys			
385	390	395	400	
Asn Thr Leu Thr Val	Gly Gly Asp Tyr Leu Arg Asp Tyr Leu Met Ser			
	405	410	415	
Tyr Gln Phe Lys Glu	Asn Ala Asp Tyr Thr Met His Ser Ala Asp Ala			
	420	425	430	
Phe Gly Gln Phe Asp	Trp Asn Pro Thr Glu His Phe Asn Val Ile Ala			
	435	440	445	
Gly Leu Arg Phe Asp	Tyr Phe Ser Glu Ser Asn Val Arg His Phe Ser			
	450	455	460	
Pro His Leu Gly Leu	Met Tyr Lys Ile Gly Asn Cys Ser Leu Arg Gly			
465	470	475	480	
Ser Tyr Ala Gln Gly	Phe Arg Ser Pro Thr Leu Lys Glu Met His Met			
	485	490	495	
Asn Phe Tyr Met Ala	Asn Thr Met Met Ile Tyr Gly Asn Pro Asp Leu			
	500	505	510	
Glu Pro Glu Thr Ser	His Asn Phe Ser Leu Ser Gly Glu Tyr Thr Lys			
	515	520	525	
Asn Arg Tyr Asn Phe	Thr Leu Thr Gly Tyr Tyr Asn Leu Val His Gly			
	530	535	540	
Arg His Gln Val Tyr	Leu Phe Gln Arg Tyr Arg Arg Asn Asp Arg Thr			
545	550	555	560	
Lys Ile Tyr Gln Tyr	Pro Thr Gly Arg His Cys Arg Asn Arg Cys Gln			
	565	570	575	
Cys Leu Cys Gln Ile	Ser Leu Arg Tyr Arg Cys Thr Tyr Leu Val Tyr			
	580	585	590	
Val His Pro Arg Val	His Ala			
	595			

<210> 9893

<211> 623

<212> PRT

<213> B.fragilis

<400> 9893

Val Ile Ala Lys Asp	Ser Glu Val Thr Ala Gly Lys Lys Glu Gly Gly
1	5 10 15
Arg Ser Met Ile Thr	Lys Met Lys Lys Leu Thr Phe Leu Val Tyr His

		20				25			30					
Lys	Glu	Tyr	Glu	Asp	Phe	Leu	Asn	Ser	Leu	Arg	Glu	Leu	Gly	Val
		35					40					45		
His	Ile	Val	Glu	Lys	Gln	Gln	Gly	Ala	Ala	Glu	Asn	Val	Glu	Leu
		50				55					60			
Asp	Asn	Ile	Arg	Leu	Ser	Ala	Arg	Leu	Ala	Ala	Leu	Lys	Leu	Leu
		65			70				75					80
Gln	Asn	Gln	Lys	His	Glu	Lys	Asp	Ala	Val	Ile	Ala	Ala	Asn	Gly
				85					90				95	
Ser	Ala	Glu	Arg	Gly	Leu	Gln	Val	Leu	Asp	Glu	Ile	Asp	Ala	Leu
			100					105					110	
Ala	Glu	His	Ser	Lys	Leu	Leu	Gln	Gln	Gln	Gln	Thr	Cys	Gly	Lys
		115					120						125	
Lys	Asp	Ala	Leu	Glu	Ala	Trp	Gly	Asn	Phe	Glu	Pro	Glu	Gly	Ile
		130				135					140			
Arg	Leu	Lys	Asp	Ala	Gly	Tyr	Val	Val	Gly	Phe	Tyr	Thr	Cys	Ser
		145			150				155					160
Gly	Asn	Tyr	Lys	Glu	Glu	Trp	Glu	Ala	Glu	Tyr	Asn	Ala	Met	Ile
			165					170					175	
Cys	Arg	Ile	Ser	Ser	Lys	Val	Phe	Phe	Ile	Thr	Val	Thr	Lys	Asp
		180					185						190	
Glu	Glu	Val	Asp	Leu	Asp	Val	Glu	Gln	Ala	Lys	Leu	Pro	Ser	Gln
		195					200					205		
Leu	Ala	Gln	Leu	Glu	Ala	Gln	Tyr	Ala	Asn	Thr	Glu	Thr	Ala	Leu
		210				215					220			
Glu	Asn	Glu	Lys	Lys	Leu	Val	Ala	Leu	Ser	Glu	Thr	Asp	Ile	Pro
		225			230					235				240
Leu	Lys	Glu	Ala	Leu	Lys	Gln	Val	Gln	Thr	Glu	Ile	Glu	Phe	Ser
			245					250					255	
Val	Val	Leu	Ser	Thr	Glu	Gln	Thr	Ala	Gly	Asp	Lys	Leu	Met	Leu
		260						265					270	
Glu	Gly	Trp	Ala	Pro	Ala	Thr	Ser	Lys	Val	Glu	Ile	Glu	Ala	Tyr
		275					280					285		
Asn	Asp	Ala	His	Ile	Tyr	Tyr	Glu	Ile	Thr	Asp	Pro	Thr	Pro	Glu
		290				295				300				
Asn	Val	Pro	Ile	Glu	Leu	Asn	Asn	Lys	Gly	Phe	Phe	Ala	Trp	Phe
		305			310				315					320
Pro	Ile	Cys	Lys	Leu	Tyr	Met	Leu	Pro	Lys	Tyr	Asn	Glu	Leu	Asp
			325					330					335	
Thr	Pro	Phe	Phe	Ala	Pro	Phe	Phe	Met	Ile	Phe	Phe	Gly	Leu	Cys
		340					345					350		
Gly	Asp	Ser	Gly	Tyr	Gly	Leu	Phe	Leu	Phe	Val	Gly	Ala	Thr	Ala
		355				360					365			
Arg	Leu	Leu	Ala	Lys	Lys	Leu	Ser	Gln	Ser	Ala	Lys	Ser	Ile	Ile
		370				375				380				
Leu	Ile	Gln	Ile	Leu	Ala	Thr	Ser	Thr	Phe	Phe	Cys	Gly	Leu	Leu
		385			390				395					400
Gly	Thr	Phe	Phe	Gly	Ala	Asn	Ile	Tyr	Asp	Leu	Pro	Trp	Pro	Phe
			405					410					415	
Gln	Arg	Leu	Lys	Ser	Ala	Val	Phe	Met	Asp	Asn	Asn	Asp	Met	Phe
		420					425					430		
Leu	Ser	Leu	Ile	Leu	Gly	Ala	Val	Gln	Ile	Leu	Phe	Gly	Met	Val
		435				440					445			
Lys	Ala	Val	Asn	Gln	Thr	Ile	Gln	Phe	Gly	Phe	Lys	Tyr	Ala	Ile
		450				455			460					
Thr	Ile	Gly	Trp	Ile	Ile	Leu	Leu	Leu	Ser	Leu	Ala	Phe	Ser	Ala
		465			470				475					480
Leu	Pro	Lys	Val	Met	Pro	Met	Gly	Ser	Thr	Val	His	Leu	Ile	Ile
			485					490					495	

Gly Ile Ala Gly Val Met Ile Phe Leu Phe Asn Ser Pro Gly Lys Asn
 500 505 510
 Ile Phe Leu Asn Ile Gly Leu Gly Leu Trp Asp Ser Tyr Asn Met Ala
 515 520 525
 Thr Gly Leu Leu Gly Asp Val Leu Ser Tyr Val Arg Leu Phe Ala Leu
 530 535 540
 Gly Leu Ser Gly Gly Ile Leu Ala Gly Val Phe Asn Ser Leu Ala Val
 545 550 555 560
 Gly Met Ser Pro Asp Asn Val Ile Ala Gly Pro Ile Val Met Val Leu
 565 570 575
 Ile Phe Val Ile Gly His Ala Ile Asn Ile Phe Met Asn Val Leu Gly
 580 585 590
 Ala Met Val His Pro Met Arg Leu Thr Phe Val Glu Phe Phe Lys Asn
 595 600 605
 Ser Gly Tyr Glu Gly Gly Gly Lys Glu Tyr Lys Pro Phe Arg Lys
 610 615 620

<210> 9894
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 9894
 Ile Met Gly Lys Lys Val Val Thr Leu Gly Glu Ile Met Leu Arg Leu
 1 5 10 15
 Ser Pro Pro Gly Asn Thr Arg Phe Val Gln Ser Asp Ser Phe Asp Val
 20 25 30
 Val Tyr Gly Gly Gly Glu Ala Asn Val Ala Val Ser Cys Ala Asn Tyr
 35 40 45
 Gly His Asp Ala Tyr Phe Ile Thr Lys Leu Pro Glu His Glu Ile Gly
 50 55 60
 Gln Ser Ala Val Asn Ala Leu Arg Lys Tyr Gly Val Lys Thr Asp Tyr
 65 70 75 80
 Ile Ala Arg Gly Gly Glu Arg Val Gly Ile Tyr Tyr Leu Glu Thr Gly
 85 90 95
 Ala Ala Met Arg Pro Ser Lys Val Ile Tyr Asp Arg Ala His Ser Ala
 100 105 110
 Ile Ala Glu Ala Val Ala Ala Asp Phe Asp Phe Asp Lys Ile Met Glu
 115 120 125
 Gly Ala Asp Trp Ile His Trp Ser Gly Ile Thr Pro Ala Ile
 130 135 140

<210> 9895
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 9895
 Arg Met Lys Asn Phe His Pro Thr Gly Thr Cys Pro Ile Arg Asp Val
 1 5 10 15
 Leu Cys Arg Leu Gly Asp Lys Trp Ser Met Leu Val Leu Val Thr Leu
 20 25 30
 Asn Ala Asn Gly Thr Met Arg Phe Gly Asp Ile His Lys Thr Ile Asp
 35 40 45
 Asp Ile Ser Gln Arg Met Leu Thr Val Thr Leu Arg Thr Leu Glu Ala
 50 55 60
 Asp Gly Leu Val Glu Arg Lys Ala Tyr Ala Glu Val Pro Pro Arg Val
 65 70 75 80
 Glu Tyr Cys Leu Thr Glu Met Gly His Ser Leu Ile Pro His Val Glu

	85		90		95										
Ala	Leu	Val	Gly	Trp	Ala	Leu	Asp	His	Met	Thr	Met	Ile	Phe	Glu	His
			100					105						110	
Arg	Glu	Gln	Gln	Lys	Gly	Leu									
						115									

<210> 9896
 <211> 252
 <212> PRT
 <213> B.fragilis

<400> 9896

Thr	Ala	Ser	Asp	Pro	Arg	Thr	Asp	Phe	Gly	Val	His	Ala	Lys	Ile	Asn
1				5					10					15	
Gln	Arg	Arg	Ile	Ile	Gly	Gln	Ser	Glu	Lys	Ala	Pro	Asn	Ile	Pro	Ile
			20					25					30		
Ile	Ile	Lys	Lys	Asn	Trp	Lys	Ser	Leu	Ser	Ile	Lys	Thr	Lys	Pro	Leu
		35				40						45			
Ser	Leu	His	Pro	Leu	Leu	Arg	Val	Ser	Ser	Ile	Asn	Ser	Asn	His	Ser
	50					55					60				
Leu	Lys	Lys	His	Leu	Phe	Lys	Met	Ala	Thr	Arg	Ile	Arg	Leu	Gln	Arg
65					70					75				80	
His	Gly	Arg	Lys	Ser	Tyr	Ala	Phe	Tyr	Ser	Ile	Val	Ile	Ala	Asp	Ser
				85					90					95	
Arg	Ala	Pro	Arg	Asp	Gly	Lys	Phe	Thr	Glu	Lys	Ile	Gly	Thr	Tyr	Asn
			100					105					110		
Pro	Asn	Thr	Asn	Pro	Ala	Thr	Val	Asp	Leu	Asn	Phe	Glu	Arg	Ala	Leu
		115					120					125			
His	Trp	Val	Leu	Val	Gly	Ala	Gln	Pro	Ser	Asp	Thr	Val	Arg	Asn	Ile
	130					135					140				
Leu	Ser	Arg	Glu	Gly	Val	Tyr	Met	Lys	Lys	His	Leu	Leu	Gly	Gly	Val
145					150					155				160	
Ala	Lys	Gly	Ala	Phe	Gly	Glu	Ala	Glu	Ala	Glu	Ala	Lys	Phe	Glu	Ala
				165				170						175	
Trp	Lys	Asn	Asn	Lys	Gln	Ser	Gly	Leu	Ser	Ala	Leu	Lys	Ala	Lys	Glu
		180					185						190		
Glu	Glu	Ala	Lys	Lys	Ala	Glu	Ala	Lys	Ala	Arg	Leu	Glu	Ala	Glu	Lys
	195					200						205			
Lys	Val	Asn	Glu	Val	Lys	Ala	Lys	Ala	Leu	Ala	Glu	Lys	Lys	Ala	Ala
	210					215					220				
Glu	Glu	Ala	Ala	Lys	Ala	Ala	Ala	Glu	Ala	Pro	Ala	Glu	Glu	Ala	Ala
225				230						235				240	
Pro	Ala	Glu	Glu	Ala	Ala	Thr	Glu	Ala	Ala	Ala	Glu				
				245					250						

<210> 9897
 <211> 447
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (37)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 9897

Asp	Phe	Asp	Asp	Ala	Leu	Val	Ser	Pro	Leu	Phe	Leu	Ser	Pro	Thr	Ala
1				5					10					15	
Pro	Ala	Pro	Leu	Gln	Ser	Leu	Gly	Val	Lys	Thr	Leu	Tyr	Pro	Val	Ile

	20		25		30										
Asn	His	Pro	Ala	Xaa	His	Gln	Thr	Tyr	Tyr	Tyr	Glu	Asp	Gln	Asp	Arg
	35						40					45			
Asn	Ala	His	Ser	Gln	Ile	Val	Ser	Leu	Asn	Ala	Arg	Pro	Asp	Phe	Lys
	50					55					60				
Asn	Ile	Phe	Arg	Leu	Ile	Ala	Glu	Ile	Thr	Asn	His	Gly	Thr	Thr	Phe
65					70					75					80
Tyr	His	Leu	Thr	Val	Arg	Val	Leu	Tyr	Leu	Val	Asn	Leu	Gln	Ala	Val
				85					90					95	
Cys	Ser	Arg	Ser	Glu	Glu	Ile	Ala	Gln	Ile	Arg	Ile	Ile	Ser	Gln	Gly
			100					105					110		
Gly	Val	Cys	Leu	Arg	Leu	His	Asp	Phe	Arg	Arg	Ser	His	Ser	Thr	Tyr
			115				120					125			
Ile	Thr	Ala	Arg	Phe	His	Ile	Pro	Gln	Ser	Asn	Val	Gly	Thr	Ala	His
	130					135					140				
Lys	Val	Asp	Glu	Ile	Ala	Gly	Ser	Phe	Arg	Ile	Thr	Gly	Ile	Leu	Arg
145					150					155					160
Asn	His	Pro	Ala	Val	Ile	Pro	Asp	Val	Ala	Ser	Phe	Pro	Arg	His	Tyr
				165				170						175	
Ile	Val	Gln	Val	His	Ser	Tyr	Arg	Ile	Arg	Phe	Phe	Asp	Gly	Pro	Phe
			180					185					190		
Gly	Ile	Ser	Ala	Pro	Gly	His	Ile	Glu	Pro	Cys	Phe	Ile	Phe	Gly	His
	195						200					205			
His	Leu	Phe	Thr	Glu	Val	Cys	Leu	Pro	Thr	Gly	Tyr	Ile	Gly	Phe	His
	210					215					220				
Arg	Leu	Glu	Val	Phe	Phe	Gly	Asn	Leu	His	Cys	Thr	Gly	Arg	Ile	Val
225					230					235					240
Val	His	Gln	Ile	Leu	Tyr	Cys	His	Leu	Ala	Ser	Gly	Gln	Ile	Thr	Gly
				245					250					255	
Met	Cys	Val	Asn	Asp	Gly	Arg	Pro	Val	Arg	Ile	Ala	Val	Thr	Val	Phe
			260					265					270		
His	Gln	Tyr	Leu	Ala	Gly	Ile	Phe	Pro	Ile	Pro	Lys	Ala	Thr	Pro	Thr
		275				280						285			
Phe	Gly	Ile	Arg	Ile	Gly	Asn	Lys	Ser	Leu	Val	Ile	Gln	Tyr	Pro	Gly
	290					295					300				
Arg	Ser	Pro	His	Val	Thr	His	Gly	Ile	Met	Thr	Gly	Asn	Ala	Ser	Gly
305					310					315					320
Leu	Thr	Gln	Leu	Ile	Asp	Leu	Phe	Pro	Asp	Ile	Arg	Arg	His	Val	Ile
				325					330					335	
His	Val	Val	Gly	Arg	Met	Gly	Lys	Asn	Gly	Val	Asp	Gly	Gln	Gln	Gln
			340					345					350		
Val	Phe	Leu	Gln	His	Pro	Leu	Asp	Asp	Val	Phe	Arg	Arg	Ala	Tyr	His
			355				360					365			
Ile	Lys	Ile	Phe	Val	Pro	Phe	Phe	Asp	Leu	Gly	Gln	His	Asp	Phe	Val
	370					375					380				
Asp	Ile	Glu	Ser	Leu	Ile	Asp	Asn	Thr	Asn	Ile	Leu	Ala	Cys	Leu	Leu
385					390					395					400
Leu	Ile	Ile	Cys	Leu	Glu	Ile	Phe	Gln	His	Ser	Val	Thr	Asp	Val	Ile
				405					410					415	
Gly	Pro	Val	Ile	Asn	Phe	Gln	Tyr	Leu	Phe	Ala	Gly	Leu	Thr	Gly	Ile
			420					425					430		
Val	Thr	Thr	Gly	Lys	His	Lys	Arg	Arg	Cys	Lys	Ala	Lys	Ser	Tyr	
			435				440						445		

<210> 9898

<211> 154

<212> PRT

<213> B.fragilis

[illegible]

<213> B.fragilis

[illegible]

<210> 9900
 <211> 371
 <212> PRT
 <213> B.fragilis

<400> 9900

Ser Met Ile Trp Lys Leu Ser Glu Arg Lys Asp Trp Asn Ser Leu Glu
 1 5 10 15
 Gln Gln Phe Gly Trp Val Arg Asp Met Asn Gln Val Pro Gln His Thr
 20 25 30
 Val His His Ala Glu Gly Ser Val Ala Val His Thr Arg Met Val Leu
 35 40 45
 Glu Ala Leu Leu Arg Gln Pro Ala Tyr Pro Met Leu Pro Glu Gln Glu
 50 55 60
 Arg Glu Ile Leu Trp Ala Ala Ala Leu Leu His Asp Val Glu Lys Arg
 65 70 75 80
 Ser Thr Ser Val Asp Glu Gly Asn Gly Gln Val Thr Ser Lys Asn His
 85 90 95
 Ala Lys Arg Gly Glu Thr Thr Val Arg Thr Leu Leu Tyr Arg Asp Ile
 100 105 110
 Pro Ala Pro Phe Asn Ile Arg Glu His Ile Ala Ser Leu Val Arg His
 115 120 125
 His Gly Leu Pro Ile Trp Leu Met Glu Arg Glu Asp Pro Leu Lys Arg
 130 135 140
 Ala Cys Glu Ala Ser Leu Arg Leu Asp Thr Ser Leu Leu Lys Gln Leu
 145 150 155 160
 Thr Val Ala Asp Ile Cys Gly Arg Ile Ser Thr Asp Lys Glu Val Leu
 165 170 175
 Leu Glu Ala Thr Glu Phe Phe Glu Met Phe Cys Arg Glu Gln Gln Cys
 180 185 190
 Trp Gly Lys Ala Arg Glu Phe Ala Asn Gly Thr Ala Arg Phe His Tyr
 195 200 205
 Phe His Thr Pro Arg Ser Tyr Ile Asp Tyr Val Pro His Asp Asp Phe
 210 215 220
 Lys Cys Glu Val Thr Leu Leu Val Gly Leu Pro Gly Met Gly Lys Asp
 225 230 235 240
 Tyr Tyr Ile Glu Ser Arg Cys Ala Asp Met Pro Val Val Ser Leu Asp
 245 250 255
 Ala Ile Arg Arg Lys His Lys Phe Ser Pro Thr Asp Lys Ala Ala Asn
 260 265 270
 Gly Trp Val Ala Gln Thr Ala Lys Glu Gln Ala Arg Ile Tyr Leu Arg
 275 280 285
 Lys Gly Gln Asp Phe Ile Trp Asn Ala Thr Asn Val Ser Arg Gln Arg
 290 295 300
 Arg Thr Gln Leu Ile Asp Leu Phe Ile Thr Tyr Gly Ala Arg Val Lys
 305 310 315 320
 Ile Val Tyr Ile Glu Lys Pro Tyr Ser Val Trp Arg Arg Gln Asn Ser
 325 330 335
 Thr Arg Glu Tyr Glu Val Pro Glu Thr Val Leu Asp Lys Met Leu Gly
 340 345 350
 Arg Leu Glu Val Pro Gln Leu Thr Glu Ala His Glu Val Val Tyr Val
 355 360 365
 Val Glu Glu
 370

<210> 9901
 <211> 65

<212> PRT

<213> B.fragilis

<400> 9901

Arg	Gly	Gly	Cys	Thr	Pro	Pro	Pro	Ala	Lys	Thr	Lys	Val	Ser	Leu	Ile
1			5						10					15	
Thr	Ala	Tyr	Arg	Asp	Gln	Gly	Leu	Val	Gly	Phe	Leu	Lys	Pro	Asn	Pro
			20					25					30		
Thr	Gly	Glu	Ala	Arg	Cys	Lys	Thr	Arg	Leu	Leu	Phe	Pro	Val	Leu	Pro
		35					40					45			
Val	Gly	Val	Met	Trp	Lys	Arg	Arg	Lys	Cys	His	Pro	Pro	Gly	Leu	Arg
	50					55					60				

Asn
65

<210> 9902

<211> 61

<212> PRT

<213> B.fragilis

<400> 9902

Phe	Leu	Leu	Cys	Ser	Pro	Asn	Phe	Met	Leu	Ser	Trp	His	Trp	Leu	Leu
1			5						10					15	
Pro	Ser	Leu	Ser	Val	Val	Arg	Leu	His	Lys	Leu	Met	Ile	Tyr	Lys	Lys
			20					25					30		
His	Leu	Ser	Val	Phe	Asp	Arg	Thr	Phe	Lys	Cys	Phe	Leu	Lys	Arg	Leu
		35					40					45			
Lys	Arg	Phe	Pro	Lys	Thr	Leu	Lys	Ser	Phe	Phe	Met	Leu			
	50					55					60				

<210> 9903

<211> 515

<212> PRT

<213> B.fragilis

<400> 9903

Arg	Glu	Asp	Arg	Gln	Arg	Met	Lys	Glu	Ser	Ser	Ser	Tyr	Lys	Trp	Ile
1				5					10					15	
Val	Leu	Gly	Asn	Ile	Met	Ile	Gly	Thr	Phe	Met	Ala	Val	Leu	Asp	Ser
			20					25					30		
Thr	Val	Val	Asn	Thr	Gly	Leu	Pro	Val	Ile	Met	Gly	Thr	Leu	Gly	Ala
		35					40					45			
Asp	Ile	Asn	Val	Ala	Glu	Trp	Val	Leu	Thr	Gly	Tyr	Met	Leu	Ser	Met
	50					55					60				
Ala	Ser	Ile	Leu	Pro	Ala	Ala	Gly	Trp	Leu	Ser	Glu	Arg	Phe	Gly	Tyr
65					70					75					80
Lys	Lys	Ile	Tyr	Phe	Leu	Ser	Leu	Leu	Val	Phe	Thr	Ala	Gly	Ser	Phe
				85					90					95	
Met	Cys	Gly	Ser	Ser	Ser	Thr	Ile	Glu	Glu	Leu	Ile	Phe	Trp	Arg	Val
			100					105					110		
Ile	Glu	Gly	Phe	Gly	Cys	Gly	Met	Leu	Leu	Pro	Val	Gly	Met	Ala	Ile
		115					120					125			
Val	Ser	Asp	Val	Phe	Pro	Pro	Glu	Gln	Arg	Gly	Thr	Ala	Leu	Gly	Phe
		130				135					140				
Trp	Ser	Ile	Ala	Ser	Ala	Ala	Ser	Val	Ser	Phe	Gly	Pro	Ala	Ile	Gly
145					150					155					160
Gly	Tyr	Leu	Val	Asp	Tyr	Met	Asp	Trp	Asn	Tyr	Ile	Phe	Tyr	Val	Asn
				165					170					175	

Ile Pro Ile Gly Ile Leu Ala Leu Ile Val Thr Ala Ile Val Gln Lys

	180		185		190
Glu His Val	Lys Gly Thr Gly	Val Pro Phe Asp Ile	Pro Gly Phe Ile		
	195	200	205		
Thr Ser Ala	Ile Phe Leu Pro Val	Phe Met Tyr Gly	Leu Ser Glu Val		
	210	215	220		
Asn Ser Ser	Thr Asn Ser Met Gly	Trp Ser Ser Pro	Val Val Leu Gly		
	225	230	235		240
Ala Met Trp	Ile Ala Val Val Thr	Phe Ile Leu Phe	Leu Tyr Phe Glu		
	245	250	255		
Phe Thr Val	Lys Thr Pro Leu Ile	Asn Leu Arg Leu	Phe Val Asp Arg		
	260	265	270		
Asp Phe Ala	Leu Ser Asn Leu Ile	Leu Phe Val Phe	Gly Ile Gly Met		
	275	280	285		
Phe Gly Ser	Thr Phe Leu Ile Pro	Leu Tyr Leu Gln	Asp Asn Leu Gly		
	290	295	300		
Tyr Ser Ala	Leu Gln Ala Gly Met	Phe Phe Met Pro	Val Gly Ile Ile		
	305	310	315		320
Gln Gly Val	Ala Ser Pro Leu Ser	Gly Lys Leu Met	Gln Arg Ile Asn		
	325	330	335		
Pro Lys Val	Phe Ile Val Ser Gly	Ile Leu Leu Met	Ala Leu Ser Phe		
	340	345	350		
Tyr Met Asn	Tyr Tyr Leu Ser Phe	Leu Thr Glu Lys	Trp Tyr Ile Met		
	355	360	365		
Leu Ser Leu	Tyr Leu Arg Gly	Leu Gly Met Gly	Leu Phe Thr Pro		
	370	375	380		
Leu Leu Thr	Leu Ser Leu Val Asn	Ile Arg Asn Ser	Asn Met Ala Gln		
	385	390	395		400
Ala Ser Ser	Ile Thr Asn Ile Val	Arg Gln Met Gly	Gly Ser Phe Gly		
	405	410	415		
Val Ala Ile	Phe Ser His Leu Leu	Thr Gln Arg Thr	Ala Phe His Thr		
	420	425	430		
Gln Arg Tyr	Gly Glu Ala Leu Asn	Tyr Thr Gly Asp	Val Tyr Arg Gln		
	435	440	445		
Thr Leu His	Ser Leu Ser Arg Phe	Ile Glu His Thr	Gly Gly Arg Thr		
	450	455	460		
Pro Asp Thr	Ala Gln Glu Val Ala	Glu Met Leu Ile	Leu Lys Arg Ile		
	465	470	475		480
Asp Leu Glu	Gly Tyr Ile Ser Ala	Ile Asn Asp Asp	Phe Phe Ile Ala		
	485	490	495		
Phe Ile Val	Thr Leu Leu Cys Val	Val Pro Val Leu	Phe Leu Arg Thr		
	500	505	510		
Lys Lys Gly					
	515				

<210> 9904

<211> 309

<212> PRT

<213> B.fragilis

<400> 9904

Leu Cys Asn	Arg Ile Tyr Lys	His Pro Asp	Ile Asp Lys	Lys Asn Ala
1	5	10	15	
Phe Ile Lys	Ile Leu Thr Thr	Lys Ile Lys	Cys Gln Met	Lys Ile Lys
	20	25	30	
Ser Leu Leu	Thr Met Met Phe	Val Leu Cys	Ala Cys Ala	Ala Cys Asn
	35	40	45	
Asp Asp Lys	Asn Glu Glu Thr	Pro Leu Asn	Gln Val Val	Ala Gly Lys
	50	55	60	
Tyr Asp Gly	Tyr Thr Lys Ala	Val Ala Gln	Tyr Phe Pro	Ala Gly Gln

65 70 75 80
 Tyr Ala Asp Lys Gln Ser Ile Thr Leu Thr Pro Asn Asp Asn Gly Thr
 85 90 95
 Val Asn Ile Ala Tyr Thr Ser Glu Ser Phe Gly Glu Phe Ser Ile Ser
 100 105 110
 Asn Ala Thr Val Glu Leu Lys Asn Asp Ala Tyr Leu Val Lys Gly Asp
 115 120 125
 Gly Lys Thr Thr Met Gly Met Asn Gly Gly Thr Pro Lys Glu Tyr Asp
 130 135 140
 Cys Thr Phe Glu Gly Thr Ile Ser Lys Asp Lys Lys Thr Ser Ala Leu
 145 150 155 160
 Glu Phe Asn Val Leu Ala Val Met Asn Gly Leu Thr Val Thr Phe Thr
 165 170 175
 Gln Gly Glu Ala Pro Ala Ala Val Met Ala Ala Gly Ser Tyr Lys Gly
 180 185 190
 Tyr Thr Lys Ala Val Ala Gln Tyr Phe Pro Asn Gly Gln Tyr Ala Ala
 195 200 205
 Asp Gln Thr Ile Lys Val Thr Ala Asn Glu Asp Gly Thr Val Asn Val
 210 215 220
 Thr Tyr Thr Ser Thr Ser Phe Gly Glu Phe Thr Ile Asn Asn Ala Thr
 225 230 235 240
 Val Lys Ser Glu Asn Asn Ala Tyr Thr Ile Asn Gly Glu Gly Lys Ser
 245 250 255
 Val Met Gly Met Glu Gly Lys Glu Pro Lys Glu Tyr Ala Cys Thr Leu
 260 265 270
 Lys Gly Thr Ile Asp Ala Ala Lys Ala Thr Pro Thr Phe Glu Ile Ser
 275 280 285
 Val Pro Ala Val Met Asn Gly Leu Thr Ile Thr Phe Ala Thr Gly Asp
 290 295 300
 Val Pro Glu Asn Lys
 305

<210> 9905
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9905
 Val Trp Leu Arg His Thr Gly Arg Met Val Thr Pro Phe Phe Val Tyr
 1 5 10 15
 Pro Tyr Cys Phe Ser Val Lys Val Lys Asn Arg Thr Pro Phe Ser Gly
 20 25 30
 Leu Leu Glu Gly Val Lys Leu Ala Ala Lys Ser Ser Gly Cys Pro Ile
 35 40 45
 Cys Pro Phe Leu Asn Arg Gly Cys Val Ser Arg Ile Phe
 50 55 60

<210> 9906
 <211> 117
 <212> PRT
 <213> B.fragilis

<400> 9906
 Ile Val Glu Arg Lys Thr Cys Gly Pro Met Lys Arg Asn Leu Leu Arg
 1 5 10 15
 Lys Glu Glu Asp Ala Asp Pro Ile Ser Val Val Ser Asn Leu Phe Asp
 20 25 30
 Val Ala Met Val Phe Ala Val Ala Leu Met Val Ala Leu Val Ser Arg
 35 40 45

Tyr Asn Met Thr Glu Val Phe Ser Gln Glu Asp Tyr Thr Met Val Lys
 50 55 60
 Asn Pro Gly Lys Glu Asn Met Glu Ile Ile Thr Lys Glu Gly Gln Lys
 65 70 75 80
 Ile Asn Arg Tyr Thr Pro Ser Glu Asp Gln Gln Lys Ser Gly Lys Lys
 85 90 95
 Gly Lys Lys Val Gly Ile Ala Tyr Glu Leu Asp Asn Gly Glu Ile Ile
 100 105 110
 Tyr Val Pro Glu Glu
 115

<210> 9907
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 9907
 Leu Asp Ile Ser Arg Tyr Cys Leu His Leu Val Ile Cys Val Leu Leu
 1 5 10 15
 Cys His His Gln Asn Val Lys Val Met Met Glu Leu Ile Ser Arg Thr
 20 25 30
 Arg Asn Gly Met Ile Thr Tyr Cys Ala His Cys Lys Val Tyr His Leu
 35 40 45
 Glu Phe Gly Asn Leu Phe Phe Arg Leu Ser Glu Ala Gly Phe Glu Cys
 50 55 60
 Leu Arg Asn Tyr Ile Val Ser Ile Asn Gly Pro Tyr Cys Glu Arg Ser
 65 70 75 80
 Asn Arg Lys Met Asn Ala Asn Arg Lys Ile Phe Leu Lys Leu Pro Ala
 85 90 95
 Gln Asn Val Tyr Phe Cys Val Cys Thr Ala Glu Leu Glu Glu Leu Lys
 100 105 110
 Ser Leu Val Leu Leu Gln Ser Pro Ala Val Glu Glu Thr Asp Gly Leu
 115 120 125
 Ile Pro Phe Met His Asp Ile Ser Leu Asn
 130 135

<210> 9908
 <211> 211
 <212> PRT
 <213> B.fragilis

<400> 9908
 Ile Lys Asn Arg Ile Met Glu Lys Thr Tyr Leu Gln Ile Thr Ser Gly
 1 5 10 15
 Arg Gly Pro Val Glu Cys Cys Arg Val Val Ala Leu Val Leu Glu Lys
 20 25 30
 Ile Leu Arg Glu Ala Gln Lys Arg Lys Leu Arg Val Glu Ile Leu Glu
 35 40 45
 Lys Glu Thr Gly Pro Val Asn Arg Thr Leu Leu Ser Ala Val Val Ala
 50 55 60
 Leu Glu Gly Ala Gly Cys Asp Val Leu Ala Asp Glu Trp Glu Gly Thr
 65 70 75 80
 Val Leu Trp Ile Ala Arg Ser Pro Tyr Arg Ile His His Arg Arg Lys
 85 90 95
 Asn Trp Phe Val Gly Val Gln Thr Phe Leu Leu Ser Glu Ser Arg Glu
 100 105 110
 Ala Thr Glu Asp Asp Ile Arg Tyr Glu Thr Leu Arg Ala Ser Gly Pro
 115 120 125
 Gly Gly Gln His Val Asn Lys Thr Glu Ser Ala Val Arg Ala Val His

130		135		140
Ile Pro Ser Gly Ile Ser Val Val Ala Ser Asp Gln Arg Ser Gln Trp				
145		150		155
Gln Asn Lys Lys Leu Ala Thr Glu Arg Leu Leu Val Lys Leu Thr Ala				
		165		170
Trp Asn Ile Glu Gln Ala Met Ile Gln Ala Gln Thr Asn Trp Ser Asn				
		180		185
His Asn Ser Leu Gln Arg Gly Asn Pro Val Lys Ile Ile Gln Glu Glu				
		195		200
Leu Arg Phe				205
210				

<210> 9909
 <211> 99
 <212> PRT
 <213> B.fragilis

<400> 9909
Pro Glu Thr Ser Val Leu Phe Lys Ser Ile Pro Ala Ile Pro Val Ala
1 5 10 15
Ile Ser Ser Glu Gly Cys Leu Arg Arg Thr Gly Phe Thr Asp Gly Pro
20 25 30
Pro Ile Gly Thr Ser Cys Pro Ser Ile Ser Gly Pro Pro Ser Ile Gly
35 40 45
Ser Pro Lys Ala Leu Lys Lys Arg Pro Ala Ser Cys Ser Leu Thr Phe
50 55 60
Ser Val Gly Asp Leu Pro Arg Asn Thr Thr Ser Ala Leu Val Gly Ile
65 70 75 80
Pro Ser Val Pro Ser Asn Thr Cys Lys Val Thr Ser Ser Pro Ala Ile
85 90 95
Phe Thr Thr

<210> 9910
 <211> 1467
 <212> PRT
 <213> B.fragilis

<400> 9910
Arg Lys Arg Leu Ser Gln Arg Ile Ser Pro Ile Val Arg Pro Ala Phe
1 5 10 15
Ser Lys Asn Glu Ile Asn Gln Arg Thr Lys Asn Asn Met Lys Lys Lys
20 25 30
Gln Ile Ile Thr Thr Cys Cys Val Ala Ala Ala Ile Leu Val Gly Val
35 40 45
Phe Val Trp Gln Ala Tyr Phe Ser Ala Thr Lys Ile Ala Phe Val Asn
50 55 60
Phe Gln Thr Ile Asn Leu Gly Asn Ile Ser Lys Ala Asn Asp Asn Ser
65 70 75 80
Phe Val Lys Leu Arg Glu Val Ser Thr Asp His Leu Asp Glu Leu Thr
85 90 95
Gly Tyr Asp Met Val Phe Val Asn Gly Met Gly Leu Arg Ile Val Glu
100 105 110
Glu Gln Arg Gln Gln Ile Gln Arg Ala Ala Asp Lys Gly Ile Pro Val
115 120 125
Tyr Thr Ser Met Ala Thr Asn Pro Ala Asn Asn Ile Cys Asn Leu Asp
130 135 140
Ser Val Gln Met Ser Gln Ile Arg Gln Tyr Leu Thr Asn Ala Gly Lys
145 150 155 160

Val	Asn	Tyr	Arg	Asn	Leu	Leu	Ser	Tyr	Val	Arg	Lys	Glu	Ile	Asp	Gly
				165					170					175	
Lys	Leu	Ile	Ser	Ala	Pro	Val	Pro	Glu	Ala	Pro	Val	Glu	Lys	Pro	Thr
			180					185					190		
Asp	Ile	Leu	Tyr	His	Ala	Gly	Val	Lys	Asn	Pro	Asp	Asp	Glu	Met	Glu
		195					200					205			
Phe	Leu	Asn	Val	Thr	Asp	Tyr	Glu	Lys	Phe	Leu	Arg	Glu	Asn	Gly	Leu
	210					215					220				
Tyr	His	Glu	Gly	Ala	Arg	Lys	Val	Val	Ile	Thr	Gly	Gln	Met	Ala	Asp
225					230					235					240
Ala	Thr	Gly	Leu	Ile	Leu	Ala	Leu	Glu	Lys	Ala	Gly	His	Asn	Val	Tyr
				245					250						255
Pro	Ile	Ser	Ser	Phe	Thr	Arg	Phe	Met	Glu	Phe	Val	Arg	Glu	Ile	Arg
			260					265					270		
Pro	Asp	Ala	Val	Ile	Asn	Met	Ala	His	Gly	Arg	Met	Gly	Asp	Asp	Met
		275					280					285			
Val	Glu	Tyr	Leu	Lys	Glu	Arg	Asn	Ile	Pro	Leu	Phe	Ala	Pro	Leu	Thr
	290					295					300				
Val	Asn	Ser	Leu	Val	Glu	Glu	Trp	Glu	Asn	Asp	Pro	Met	Gly	Met	Ser
305					310					315					320
Gly	Gly	Phe	Leu	Ser	Gln	Ser	Val	Val	Thr	Pro	Glu	Ile	Asp	Gly	Ala
				325					330					335	
Ile	Arg	Pro	Phe	Ala	Leu	Phe	Ala	Gln	Tyr	Lys	Asp	Asp	Glu	Gly	Leu
			340					345					350		
Gln	His	Ser	Phe	Ala	Val	Pro	Glu	Arg	Leu	Glu	Thr	Phe	Val	Asn	Thr
		355					360					365			
Val	Asn	Asn	Tyr	Leu	Thr	Leu	Lys	Thr	Lys	Pro	Asn	Ser	Glu	Lys	His
	370					375					380				
Ile	Ala	Ile	Val	Tyr	Tyr	Lys	Gly	Pro	Gly	Gln	Asn	Ala	Leu	Thr	Ala
385					390					395					400
Ser	Gly	Met	Glu	Val	Gly	Pro	Ser	Leu	Tyr	Asn	Leu	Leu	Leu	Arg	Met
				405					410					415	
Lys	Lys	Glu	Gly	Tyr	Arg	Val	Glu	Asn	Leu	Pro	Glu	Ser	Ala	Lys	Glu
			420					425					430		
Leu	Glu	Lys	Met	Ile	Gln	Ala	Gln	Gly	Ala	Val	Phe	Gly	Met	Tyr	Ala
		435					440					445			
Glu	Gly	Ala	Phe	Asp	Glu	Phe	Met	Lys	Thr	Gly	Asn	Pro	Glu	Leu	Val
	450					455					460				
Thr	Lys	Glu	Gln	Tyr	Glu	Ser	Trp	Val	Lys	Ala	Ser	Leu	Arg	Pro	Gly
465					470					475					480
Lys	Tyr	Ala	Glu	Val	Val	Ala	Ala	Asn	Gly	Glu	Phe	Pro	Gly	Gln	Tyr
				485					490					495	
Met	Thr	Thr	Pro	Asp	Gly	Arg	Leu	Gly	Ile	Ala	Arg	Leu	Gln	Phe	Gly
			500					505					510		
Asn	Val	Val	Leu	Met	Pro	Gln	Met	Ala	Ala	Gly	Ser	Gly	Asp	Asn	Ala
		515					520					525			
Phe	Gln	Val	Val	His	Gly	Thr	Asn	Ala	Ala	Pro	Pro	His	Thr	Tyr	Ile
	530					535					540				
Ala	Ser	Tyr	Leu	Trp	Leu	Gln	His	Gly	Phe	Lys	Ala	Asp	Ala	Met	Ile
545					550					555					560
His	Phe	Gly	Thr	His	Gly	Ser	Leu	Glu	Phe	Thr	Pro	Arg	Lys	Gln	Val
				565					570					575	
Ala	Leu	Cys	Ser	Asp	Asp	Trp	Pro	Asp	Arg	Leu	Val	Gly	Ala	Leu	Pro
			580					585					590		
His	Leu	Tyr	Ile	Tyr	Ser	Ile	Gly	Asn	Val	Gly	Glu	Gly	Met	Ile	Ala
		595					600					605			
Lys	Arg	Arg	Ser	Tyr	Ala	Thr	Leu	Gln	Ser	Tyr	Leu	Thr	Pro	Pro	Phe
	610					615					620				
Leu	Glu	Ser	Ser	Val	Arg	Gly	Ile	Tyr	Arg	Asp	Leu	Met	Glu	Lys	Ile

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625		630		635		640
Lys Ile Tyr Asn Asn Thr Thr Gly Ala Lys Glu Lys Gln Ser Leu Ala						
	645		650		655	
Val Lys Ala Leu Thr Val Lys Leu Gly Ile His Arg Glu Leu Gly Leu						
	660		665		670	
Asp Ser Leu Pro Thr Arg Pro Tyr Ser Glu Asp Glu Val Ala Arg Val						
	675		680		685	
Glu Asn Phe Ala Glu Glu Leu Gly His Gly Lys Ile Thr Gly Gln Leu						
	690		695		700	
Tyr Thr Met Gly Val Pro Tyr Glu Pro Glu Arg Ile Thr Ser Ser Val						
705		710		715		720
Leu Ala Met Thr Thr Glu Pro Ile Ala Tyr Ser Leu Leu Ser Leu Asp						
	725		730		735	
Lys Gln Arg Gly Lys Ala Thr Ala Asp Val Glu Lys His Arg Ser Leu						
	740		745		750	
Phe Thr Gln Arg Tyr Leu Asn Pro Ala Arg Ala Leu Val Glu Lys Leu						
	755		760		765	
Ile Ala Asn Pro Ala Leu Ala Thr Asp Glu Leu Ile Cys Arg Thr Ala						
	770		775		780	
Gly Val Ser Pro Glu Glu Leu Ala Lys Ala Arg Glu Ile Glu Thr Ser						
785		790		795		800
Arg Asn Ala Pro Lys Gly Met Met Ala Met Met Met Ala Ala Ala						
	805		810		815	
Lys Asn Lys Thr Gly Asp Lys Thr Gly Lys Thr Ala Asp Lys Met Pro						
	820		825		830	
Glu Ala Met Lys Lys Lys Met Lys Glu Met Gly Ala His Met Asp Ser						
	835		840		845	
Ser Lys Ala Met Glu Met Ala Lys Lys Met Gly Ala Asp Pro Glu Ala						
	850		855		860	
Leu Lys Lys Met Glu Ala Lys Met Asn Ala Ser Lys Gly Asp Lys Pro						
865		870		875		880
Glu Ala Asp Lys Ala Lys Gly Met Ser Asp Met Met Ala Ala Met Gly						
	885		890		895	
Lys Lys Thr Ala Gln Lys Glu Tyr Ser Lys Glu Glu Ile Asn Phe Ala						
	900		905		910	
Leu Ala Leu Thr Glu Val Glu Arg Thr Ile Arg Asn Val Gly Asn Tyr						
	915		920		925	
Gln Thr Glu Leu Thr Ala Ser Pro Glu Lys Glu Leu Ala Ser Leu Val						
	930		935		940	
Asn Ala Leu Asn Gly Gly Tyr Thr Ala Pro Ser Pro Gly Gly Asp Pro						
945		950		955		960
Ile Ala Asn Pro Asn Thr Leu Pro Thr Gly Arg Asn Met Tyr Ala Ile						
	965		970		975	
Asn Ala Glu Ala Thr Pro Ser Glu Ser Ala Trp Glu Lys Gly Val Ala						
	980		985		990	
Leu Ala Lys Gln Thr Ile Glu Thr Tyr Gln Arg Arg His Asn Asp Ser						
	995		1000		1005	
Ile Pro Arg Lys Val Ser Tyr Thr Leu Trp Ser Gly Glu Phe Ile Glu						
	1010		1015		1020	
Thr Gly Gly Ala Thr Ile Ala Gln Val Leu Tyr Met Leu Gly Val Glu						
1025		1030		1035		1040
Pro Val Arg Asp Ala Phe Gly Arg Val Ser Asp Leu Lys Leu Ile Pro						
	1045		1050		1055	
Ser Ala Glu Leu Gly Arg Pro Arg Ile Asp Val Val Val Gln Thr Ser						
	1060		1065		1070	
Gly Gln Leu Arg Asp Ile Ala Ala Ser Arg Leu Phe Leu Ile Asn Arg						
	1075		1080		1085	
Ala Val Glu Met Ala Ala Ala Ala Lys Asp Asp Lys Tyr Glu Asn Leu						
1090		1095		1100		

Val Ala Ala Ser Val Val Glu Ala Glu Lys Thr Leu Thr Glu Lys Gly
 1105 1110 1115 1120
 Val Ser Pro Lys Asp Ala Arg Glu Met Ala Ala Phe Arg Val Phe Gly
 1125 1130 1135
 Gly Ala Asn Gly Met Tyr Gly Thr Gly Ile Gln Glu Met Val Glu Ser
 1140 1145 1150
 Gly Asp Arg Trp Glu Asp Glu Ser Glu Ile Ala Ala Thr Tyr Leu Asn
 1155 1160 1165
 Asn Met Gly Ala Tyr Tyr Gly Ser Glu Lys Asn Trp Glu Ala Phe Arg
 1170 1175 1180
 Lys Tyr Ala Leu Glu Ala Ala Leu Thr Arg Thr Asp Val Val Val Gln
 1185 1190 1195 1200
 Pro Arg Gln Ser Asn Thr Trp Gly Ala Leu Ser Leu Asp His Val Tyr
 1205 1210 1215
 Glu Phe Met Gly Gly Met Asn Leu Ala Val Arg Asn Val Thr Gly Lys
 1220 1225 1230
 Asp Pro Asp Ala Tyr Leu Ser Asp Tyr Arg Asn Arg Asn His Met Arg
 1235 1240 1245
 Met Gln Glu Val Lys Glu Ala Val Gly Val Glu Ser Arg Thr Thr Ile
 1250 1255 1260
 Leu Asn Pro Ala Tyr Ile Lys Glu Lys Met Lys Gly Gly Ser Ser Ser
 1265 1270 1275 1280
 Ala Ala Glu Phe Ala Glu Thr Val Thr Asn Thr Tyr Gly Trp Asn Val
 1285 1290 1295
 Met Lys Pro Ala Ala Ile Asp Lys Glu Leu Trp Asp Asn Ile Tyr Asn
 1300 1305 1310
 Val Tyr Val Lys Asp Glu Tyr Asn Leu Asn Val Lys Glu Phe Phe Glu
 1315 1320 1325
 Thr Gln Ser Pro Ala Ala Leu Glu Glu Met Thr Ala Ile Met Leu Glu
 1330 1335 1340
 Ser Ala Arg Lys Gly Leu Trp Lys Ala Ser Ala Glu Gln Val Ala Glu
 1345 1350 1355 1360
 Leu Ala Lys Leu His Thr Glu Thr Val Asn Lys Tyr Arg Pro Ser Cys
 1365 1370 1375
 Ser Gly Phe Val Cys Asp Asn Ala Lys Leu Arg Glu Tyr Ile Ala Ser
 1380 1385 1390
 Lys Ser Asp Ala Pro Ala Ala Ala Gln Tyr Lys Glu Asn Ile Ser Lys
 1395 1400 1405
 Ile Arg Glu Ala Lys Val Ser Gly Asp Ala Lys Gly Met Val Met Lys
 1410 1415 1420
 Lys Glu Glu Ile Asn Arg Thr Pro Glu Glu Gln Lys Thr Thr Leu Ser
 1425 1430 1435 1440
 Asn Ile Ala Val Gly Ala Ala Val Val Val Val Ile Leu Ala Leu Val
 1445 1450 1455
 Leu Phe Val Arg Lys Arg Arg Lys Thr Ser Glu
 1460 1465

<210> 9911
 <211> 231
 <212> PRT
 <213> B.fragilis

<400> 9911
 Leu Ile Ser Arg Ile Met Asp Ala Ala Asn Thr Ser Asn Pro Ser Asp
 1 5 10 15
 Lys Lys Lys Phe Ile Trp Leu Val Ile Leu Leu Ile Ile Ala Ile Val
 20 25 30
 Val Ala Val Val Trp Trp Trp Asn Tyr Arg Lys Tyr Val Ser Thr Ile
 35 40 45

Asp Ala Asn Leu Asp Gly Ser Arg Val Asn Val Ser Val Arg Ala Met
 50 55 60
 Ala Pro Leu Ser Ala Val Phe Lys Gln Glu Gly Asp Ser Val Lys Arg
 65 70 75 80
 Gly Glu Leu Leu Ala Val Leu Asp Ser Thr Met Thr Glu Asp Tyr Arg
 85 90 95
 Ile Val Ser Pro Val Asp Gly Leu Ile Ala Lys Gln Trp Val Val Pro
 100 105 110
 Gly Asp Leu Leu Gln Pro Gly Glu Asn Ile Phe Thr Leu Asn Glu Gly
 115 120 125
 Lys Lys Leu Trp Val Thr Val Tyr Leu Gln Glu Thr Lys Phe Asp Glu
 130 135 140
 Val Arg Met Gly Gln Gln Ala Leu Phe Thr Leu Asp Ala Tyr Pro Gly
 145 150 155 160
 Leu Thr Phe Tyr Gly Lys Ile Phe Tyr Ile Gly Ala Asn Thr Ala Ser
 165 170 175
 Glu Phe Ser Leu Ile Pro Pro Asp Asn Ala Ser Gly Asn Tyr Thr Lys
 180 185 190
 Val Ala Gln Arg Ile Pro Leu Lys Ile Ser Ile Asp Arg Val Glu Gly
 195 200 205
 Lys Glu Lys Leu Lys Ala Asn Leu Arg Leu Leu Ser Gly Met Ser Ala
 210 215 220
 Asn Val Lys Ile Val Lys Glu
 225 230

<210> 9912
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 9912
 Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val
 1 5 10 15
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val
 20 25 30
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln
 35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr
 50 55 60
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 9913
 <211> 269
 <212> PRT
 <213> B.fragilis

<400> 9913
 Tyr Glu Arg Arg Arg Trp Ala Met Val Lys Lys Ile Phe Ala Gln Thr
 1 5 10 15
 Tyr Leu Trp Ile Leu Leu Leu Leu Tyr Ser Pro Ile Val Ile Ile
 20 25 30
 Met Ile Tyr Ser Phe Thr Glu Ala Lys Val Leu Gly Asn Trp Thr Gly
 35 40 45
 Phe Ser Thr Lys Leu Tyr Ser Ser Leu Phe Thr Thr Gly Thr His His
 50 55 60
 Ser Leu Met Asn Ala Leu Ile Asn Thr Val Thr Ile Ala Leu Ile Ala

65					70					75				80	
Ala	Thr	Ala	Ser	Thr	Leu	Leu	Gly	Ser	Ile	Thr	Ala	Ile	Gly	Ile	Phe
				85					90					95	
Asn	Leu	Lys	Ala	Arg	Ser	Arg	Lys	Ala	Ile	Ser	Phe	Val	Asn	Ser	Ile
			100					105					110		
Pro	Ile	Leu	Asn	Gly	Asp	Ile	Ile	Thr	Gly	Ile	Ser	Leu	Phe	Leu	Leu
		115					120					125			
Phe	Val	Ser	Leu	Gly	Ile	Ser	Gln	Gly	Tyr	Thr	Thr	Val	Val	Leu	Ala
	130						135				140				
His	Ile	Thr	Phe	Cys	Thr	Pro	Tyr	Val	Val	Leu	Ser	Val	Leu	Pro	Arg
145				150						155					160
Leu	Lys	Gln	Met	Asn	Pro	Asn	Ile	Tyr	Glu	Ala	Ala	Leu	Asp	Leu	Gly
				165					170					175	
Ala	Thr	Pro	Met	Gln	Ala	Leu	Arg	Lys	Val	Ile	Val	Pro	Glu	Ile	Arg
			180					185					190		
Pro	Gly	Met	Ile	Ser	Gly	Phe	Met	Leu	Ala	Leu	Thr	Leu	Ser	Ile	Asp
		195					200					205			
Asp	Phe	Ala	Val	Thr	Val	Phe	Thr	Ile	Gly	Asn	Glu	Gly	Leu	Glu	Thr
	210					215					220				
Leu	Ser	Thr	Tyr	Ile	Tyr	Ala	Asp	Ala	Arg	Lys	Gly	Gly	Leu	Thr	Pro
225				230						235					240
Glu	Leu	Arg	Pro	Leu	Ser	Thr	Ile	Ile	Phe	Val	Val	Val	Leu	Ala	Leu
				245					250					255	
Leu	Ile	Val	Ile	Asn	Arg	Arg	Ala	Gly	Lys	Glu	Lys	Lys			
			260					265							

<210> 9914
 <211> 137
 <212> PRT
 <213> B.fragilis

<400> 9914

Thr	Glu	Arg	Ser	Ser	Val	Met	Glu	Lys	Val	Phe	Gly	Ile	Leu	Leu	Leu
1				5					10					15	
Val	Leu	Phe	Val	Cys	Thr	Ser	Cys	Gly	Asp	Lys	Ser	Glu	Pro	Ser	Phe
			20					25					30		
Lys	Val	Tyr	Asp	Glu	Tyr	Ser	Lys	Glu	Lys	Lys	Val	Glu	Lys	Lys	Asn
		35					40					45			
Asn	Ile	Gly	Lys	Ala	Thr	Tyr	Ile	Phe	Trp	Ile	Asn	Lys	Thr	Glu	Ala
	50					55					60				
Lys	Lys	Leu	Arg	Gly	Leu	Thr	Phe	Asn	Ile	Lys	Cys	Lys	Val	Thr	Ile
65				70					75						80
Asn	Glu	Asp	Gly	Ser	Ile	Lys	Ile	Leu	Gly	Tyr	Glu	Lys	Glu	Gln	Pro
				85					90					95	
Tyr	Thr	Val	Thr	Lys	Ser	Leu	Lys	Lys	Tyr	Leu	Lys	Thr	Phe	Arg	Val
			100					105					110		
Asp	Lys	Glu	Ala	Leu	Ala	Asp	Gly	Arg	Val	Lys	Val	Gly	Asp	Gln	Val
		115					120					125			
Val	Phe	Leu	Arg	Tyr	Val	Val	Leu	Lys							
	130					135									

<210> 9915
 <211> 417
 <212> PRT
 <213> B.fragilis

<400> 9915

Tyr	Arg	Asn	Gly	Glu	Phe	Met	Lys	Asn	Ile	Arg	Gln	Phe	His	Leu	Leu
1				5					10					15	

Ser Ser Ile Leu Gly Gly Val Phe Leu Phe Ser Ser Cys Ser Val Val
 20 25 30
 Pro Lys Ala Glu Glu Lys Asn Leu Ser Glu Gln Trp Pro Val Val Ala
 35 40 45
 Ser Tyr Gln Trp Ala Gly Gln Asp Ser Val Val Val Cys Asp Leu Ser
 50 55 60
 Leu Leu Lys Asp Thr Val Asp Leu Pro Phe Ser Phe Phe Leu Lys Asp
 65 70 75 80
 Phe Gln Ile Ile Lys Leu Asp Asn Arg Asp Glu Ala Met Val Gly Glu
 85 90 95
 Asn Asn Leu Cys Val Ser Glu Asn Tyr Ile Leu Val Tyr Gly Ser Val
 100 105 110
 Tyr Glu Leu His Pro Cys Arg Leu Phe Thr Lys Lys Gly Glu Phe Val
 115 120 125
 Thr Asn Ile Gly Ala Ile Gly Gln Gly Pro Gly Glu Tyr Arg Ala Val
 130 135 140
 Tyr Lys Ala Glu Ile Asp Glu Lys His Asn Cys Ile Tyr Leu Met Pro
 145 150 155 160
 Phe Ala Asn Ser Asn Ala Ile Tyr Val Tyr Asp Leu Ala Gly Lys Pro
 165 170 175
 Leu Arg Ser Ile Pro Leu His Gln Ser Val Ser Lys Ala Val Phe Lys
 180 185 190
 Val Asp Ala Asp Lys Arg Glu Leu Thr Val Gly Ala Leu Pro Phe Thr
 195 200 205
 Gly Tyr Pro Phe Val Ala Trp Val Gln Asp Phe Glu Gly His Leu Leu
 210 215 220
 Asp Ser Val Pro Ala Ala Arg His Leu Ser Val Leu Pro Asp Tyr Ser
 225 230 235 240
 Asn Glu Val Met Tyr Gly Ala Asn Thr Glu Val Phe Asp Phe Tyr Ile
 245 250 255
 Ser Thr Phe Phe Glu Leu Arg Pro Asp Thr Leu Tyr His Tyr Ile Arg
 260 265 270
 Ser Gly Ser Arg Leu Lys Pro Arg Phe Thr Leu Asn Ile Gly Asp Arg
 275 280 285
 Lys Arg Ser Ile Thr Thr Phe Tyr Glu Leu Pro Gln Ala Tyr Val Gly
 290 295 300
 Arg Leu Met Val Glu Glu Gln Val Gly Asp Gly Met Trp Glu Thr Lys
 305 310 315 320
 Ser Pro Ser Asn Phe Ile Val Asp Lys Ala Ser Leu Arg Gly Thr Phe
 325 330 335
 Phe Arg Val Ile Asn Asp Phe Ala Gly Gly Met Pro Asp Arg Leu Trp
 340 345 350
 Thr Pro Trp Ser Leu Arg Asn Lys Gln Tyr Ile Arg Leu Val Glu Pro
 355 360 365
 Gly Val Leu Lys Ala Glu Ile Glu Ser Tyr Leu Ser Ser Thr Asp Gly
 370 375 380
 Arg Lys Gly Lys Asn Arg Lys Lys Leu Gln Glu Leu Cys Glu Ser Ile
 385 390 395 400
 Gly Glu Glu Asp Asn Ser Tyr Val Ile Tyr Ala Lys Gln Lys Gly Val
 405 410 415
 Gln

<210> 9916

<211> 260

<212> PRT

<213> B.fragilis

<400> 9916

Pro Asn Leu Met Asp Ile His Gln Glu Leu Lys Glu Leu Ser Lys Phe
 1 5 10 15
 Leu Ser Glu Tyr Ser Thr Ser Leu Met Ala Val Gly Val Gln Thr Ser
 20 25 30
 Arg Ile Val Arg Asn Thr Ser Arg Ile Ala Glu Ser Phe Gly Phe Phe
 35 40 45
 Cys Asp Met Thr Ile Phe Gln Lys Thr Ile Ile Met Thr Leu Arg Asp
 50 55 60
 Ala Asp Asn Ser His Ser Tyr Ser Thr Val Asn Lys Ile Lys Pro Met
 65 70 75 80
 Gly Leu Asn Phe Ala Ile Asn Ser Ala Leu Ser Thr Leu Ser Trp Glu
 85 90 95
 Ala Tyr Asp Glu His Leu Ser Leu Ser Glu Leu Gln Arg Arg Tyr His
 100 105 110
 Glu Ile Val Ser Lys Pro Arg Glu Ser Lys Trp Leu Val Leu Ile Leu
 115 120 125
 Val Ala Phe Ala Asn Ala Ser Phe Cys Arg Leu Phe Gln Gly Asp Phe
 130 135 140
 Ile Ser Met Gly Ile Val Phe Val Ala Thr Leu Ala Gly Phe Phe Val
 145 150 155 160
 Arg Thr Glu Leu Met Gly Arg His Trp Asn His Leu Ala Ile Phe Ile
 165 170 175
 Ile Ser Ser Phe Ile Ala Ser Met Ile Gly Ser Thr Gly Tyr Leu Met
 180 185 190
 His Trp Gly Asp Thr Pro Asp Met Ala Leu Gly Thr Ser Val Leu Tyr
 195 200 205
 Leu Ile Pro Gly Val Pro Leu Ile Asn Ala Ile Met Asp Ile Ile Asp
 210 215 220
 Gly His Val Leu Ala Gly Thr Ser Arg Phe Ile Asn Ala Cys Leu Leu
 225 230 235 240
 Ile Ile Cys Ile Ala Ile Gly Leu Ser Met Thr Leu Leu Ile Thr Gly
 245 250 255
 Ile Ser Thr Leu
 260

<210> 9917
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 9917
 Gln Asp Ile Ile Thr Trp Cys Thr Val Ala Ile Lys Tyr Thr Ser Phe
 1 5 10 15
 Arg Asp Thr Asp Gly Met Ile Ala Gln Arg Tyr Ile Asn Thr Pro Arg
 20 25 30
 Val Asp Ile Ala Gly Ile Asp Ala Asn Ala Ser Ala Lys Tyr Pro Cys
 35 40 45
 Gly Ile Gly Ala Arg Ile Ser Tyr Thr Tyr Ile His Glu Phe Met Arg
 50 55 60
 Asp Gly Gln Thr Lys Leu Ser Ser Thr Arg Pro His Ser Ala Thr Val
 65 70 75 80
 Arg Leu Glu Tyr Gly Lys Thr Trp Asp His Tyr Asp Phe Asn Leu Ser
 85 90 95
 Leu Asp Gly Arg Ala Leu Ser Gln Val Lys Thr Asn Gln Tyr Thr Ser
 100 105 110
 Asn Asp Pro Asn Ala Gly Thr Glu Lys Val Thr Tyr Pro Gly Tyr Thr
 115 120 125
 Met Trp Asn Leu Thr Leu Thr Gln Arg Ile Trp Lys Gly Ile Asn Val
 130 135 140

Asn Met Ala Val Asn Asn Leu Phe Asn Tyr Arg Pro Asp Tyr Tyr Tyr
 145 150 155 160
 Ala Asn Ser Pro Tyr Thr Thr Gly Thr Asn Phe Ser Val Gly Leu Ser
 165 170 175
 Leu Asp Ile Asp Gln Met Phe Arg Lys
 180 185

<210> 9918

<211> 227

<212> PRT

<213> B.fragilis

<400> 9918

Ile Val Tyr Ile Leu Met Ala Lys Phe Asp Lys Ile Ala Val Leu Asn
 1 5 10 15
 Lys Ile Gly Ser Thr Gly Met Val Pro Val Phe Tyr His Glu Asp Val
 20 25 30
 Glu Ile Ala Lys Lys Val Val Lys Ala Cys Tyr Glu Gly Gly Val Arg
 35 40 45
 Ala Phe Glu Phe Thr Asn Arg Gly Asp Phe Ala Gln Glu Val Phe Ala
 50 55 60
 Gly Leu Val Lys Phe Ala Val Arg Glu Cys Pro Glu Met Ala Met Gly
 65 70 75 80
 Val Gly Ser Val Val Asp Pro Ala Thr Ala Ala Leu Tyr Ile Gln Ser
 85 90 95
 Gly Ala Asp Phe Val Val Gly Pro Leu Phe Asn Pro Glu Ile Ala Lys
 100 105 110
 Ile Cys Asn Arg Arg Leu Ile Ala Tyr Thr Pro Gly Cys Gly Ser Val
 115 120 125
 Ser Glu Val Gly Phe Ala Gln Glu Ala Gly Cys Asp Leu Cys Lys Ile
 130 135 140
 Phe Pro Gly Asp Val Tyr Gly Pro Asn Phe Val Lys Gly Leu Met Ala
 145 150 155 160
 Pro Met Pro Trp Ser Lys Leu Met Val Thr Gly Gly Val Glu Pro Thr
 165 170 175
 Arg Glu Asn Leu Thr Gly Trp Phe Gly Ala Gly Ala Phe Cys Val Gly
 180 185 190
 Met Gly Ser Lys Leu Phe Pro Lys Asp Lys Val Ala Ala Glu Asp Trp
 195 200 205
 Gly Tyr Val Thr Lys Lys Cys Thr Glu Ala Leu Glu Tyr Ile Ala Glu
 210 215 220
 Ala Arg Lys
 225

<210> 9919

<211> 199

<212> PRT

<213> B.fragilis

<400> 9919

Ser Val Asn Met Glu Asn Lys Ile Gln Glu Leu Thr Asp Lys Ile Tyr
 1 5 10 15
 Arg Glu Gly Val Glu Lys Gly Asn Glu Ala Arg Arg Leu Ile Ala
 20 25 30
 Asn Ala Gln Glu Glu Ala Lys Lys Ile Val Glu Asp Ala His Lys Glu
 35 40 45
 Ala Glu Ser Ile Ile Ala Ser Ser Arg Lys Ser Ala Asp Glu Leu Thr
 50 55 60
 Glu Asn Thr Lys Ser Glu Leu Lys Leu Phe Ala Gly Gln Ala Val Asn

65					70					75				80	
Ala	Leu	Lys	Ser	Glu	Ile	Ala	Thr	Met	Val	Thr	Asp	Lys	Ile	Val	Thr
				85					90					95	
Ala	Pro	Val	Lys	Glu	Phe	Ala	Gln	Asn	Lys	Asp	Phe	Leu	Asn	Ala	Phe
			100					105					110		
Ile	Val	Ala	Leu	Ala	Ser	Lys	Trp	Ser	Val	Asp	Glu	Pro	Ile	Ile	Ile
		115					120					125			
Ser	Thr	Ser	Asp	Ala	Glu	Ser	Leu	Lys	Lys	Tyr	Phe	Ala	Ala	Asn	Ala
	130					135					140				
Lys	Ala	Leu	Leu	Asp	Lys	Gly	Val	Thr	Ile	Glu	Gln	Val	Asn	Gly	Ile
145				150						155					160
Lys	Ala	Leu	Phe	Ser	Val	Ser	Pro	Ala	Asp	Gly	Ser	Tyr	Lys	Val	Asn
			165						170					175	
Phe	Gly	Glu	Glu	Glu	Phe	Met	Asn	Tyr	Phe	Lys	Ala	Phe	Leu	Arg	Pro
		180						185					190		
Gln	Leu	Val	Glu	Met	Leu	Phe									
		195													

<210> 9920

<211> 220

<212> PRT

<213> B.fragilis

<400> 9920

Ser	Arg	Cys	Ile	Met	Arg	Arg	Ile	Phe	Ile	Phe	Ile	Ala	Phe	Ala	Leu
1				5				10					15		
Cys	Ser	Leu	Trp	Gln	Leu	Arg	Ala	Gln	Ala	Asp	Thr	Ala	Ser	Phe	Leu
			20					25				30			
Phe	Asp	Lys	Tyr	Glu	Asp	Ala	Gln	Val	Leu	Leu	Arg	Ala	Gly	Gly	Glu
		35					40					45			
Leu	Lys	Ser	Lys	Met	Asn	Tyr	Ser	Ile	Val	Val	Asn	Lys	Phe	Tyr	Phe
	50					55					60				
Ile	Asp	Pro	Gln	Asp	Lys	Gln	Val	Lys	Glu	Leu	Ala	Asn	Pro	Gly	Asp
65				70				75						80	
Ile	Leu	Leu	Ile	Lys	Ile	Ala	Gly	Arg	Thr	Phe	Tyr	Pro	Glu	Ser	Asn
			85					90					95		
Gly	Ala	Gly	Ile	Glu	Met	Leu	Pro	Thr	Lys	Pro	Val	Val	Tyr	Val	Gln
		100						105					110		
Tyr	Lys	Ala	Thr	Ala	Arg	Lys	Glu	Ala	Pro	Met	Gly	Ala	Tyr	Gly	Thr
		115					120					125			
Arg	Ser	Glu	Thr	Thr	Ala	Val	Gln	Ser	Tyr	Gly	Thr	Ile	Thr	Ser	Asn
	130					135					140				
Gly	Gln	Ser	Tyr	Lys	Leu	Glu	Gly	Glu	Lys	Ile	Ile	Val	Ser	Asn	Arg
145				150						155					160
His	His	Val	Tyr	Trp	Val	Glu	Lys	Asp	Asp	Lys	Met	Lys	Gln	Phe	Arg
			165					170					175		
Asn	Phe	Lys	Gln	Leu	Ala	Lys	Ile	Tyr	Ser	Lys	His	Arg	Ala	Glu	Val
		180						185					190		
Glu	Lys	Tyr	Ile	Glu	Asp	Asn	Lys	Val	Asn	Phe	Glu	Asp	Val	Asp	Gln
		195				200						205			
Ile	Val	Lys	Leu	Cys	Ser	Tyr	Ala	Asp	Ser	Leu	Lys				
	210					215					220				

<210> 9921

<211> 130

<212> PRT

<213> B.fragilis

<400> 9921

Ser Ser Pro Leu Lys Thr Thr Ser Lys Thr Met Ile Lys Glu Lys Ala
 1 5 10 15
 Thr Pro His Ile Gly Leu Val Thr Asp Leu Thr Thr Gly Gln Ile Asp
 20 25 30
 Gly Lys Ile Thr Pro Gly Gly Met Val Leu Val Thr Gly Cys Asn Ile
 35 40 45
 Lys Ile Glu Asn Gly Asn Lys Pro Val Cys Glu Ala Ile Gln Leu Ser
 50 55 60
 His Gln Asn Gly Glu Val Ile Cys Ile Asp Pro Pro Phe Glu Met Asn
 65 70 75 80
 Glu Pro His Ile Leu Lys Phe Lys Met Pro Asp Ser Leu Pro Thr Gly
 85 90 95
 Glu Tyr Thr Leu Thr Ile Lys Thr Arg Phe Ala Gly Lys Asp Lys Arg
 100 105 110
 Leu Leu Thr Gln Glu Gln Thr Leu Val Tyr Met Leu Lys Leu Ile Arg
 115 120 125
 Glu Glu
 130

<210> 9922

<211> 840

<212> PRT

<213> B.fragilis

<400> 9922

Leu Met Glu Ile Thr Lys Arg Asn Gly Thr Thr Glu Pro Tyr Asp Arg
 1 5 10 15
 Glu Lys Ile Ala Val Ala Ile Arg Lys Ser Phe Ala Ser Thr Gly Gln
 20 25 30
 Glu Val Ser Asn Glu Ile Ile Tyr Ser Val Val Glu Glu Val Glu Asn
 35 40 45
 Phe Val Gly Lys Asp Thr Ala Asn Arg Ser Val Glu Gln Ile Gln Asp
 50 55 60
 Lys Val Glu Gln Ser Leu Met Glu His Gly Phe Tyr Ala Glu Ala Lys
 65 70 75 80
 Asn Tyr Ile Leu Tyr Arg Trp Gln Arg Thr Glu Arg Arg Lys Ala Leu
 85 90 95
 Asn Ser Ile Ile Asn Glu Leu Gly Asp Gly Thr Val Met Asp Val Leu
 100 105 110
 Lys Glu Ile Gln Lys Asp Phe Thr His Glu Tyr Ser Leu Val Val
 115 120 125
 Leu Tyr Glu Lys Phe Ser Gly Phe Cys Lys Gln Glu Met Pro His Ser
 130 135 140
 Glu Arg Leu Ala Ala Leu Ile Lys Ala Ala Val Glu Leu Thr Thr Gln
 145 150 155 160
 Glu Ala Pro Asp Trp Glu Phe Ile Ala Ala Arg Leu Leu Asn Phe Gln
 165 170 175
 Leu Ser Lys Lys Leu Glu Lys Gln Ala Ala Ser Ala Gly Ile Arg Ser
 180 185 190
 Phe Tyr Asp Lys Leu Arg Tyr Leu Thr Glu Glu Gly Leu Tyr Gly Ser
 195 200 205
 Tyr Ile Leu Ala Ala Tyr Ser Gln Gln Glu Ile Glu Glu Ala Ala Gly
 210 215 220
 Phe Ile Cys Pro Asp Arg Asp Lys Leu Phe Asn Tyr Ser Gly Leu Asp
 225 230 235 240
 Leu Leu Val Lys Arg Tyr Leu Ile Arg Thr Arg Leu His Glu Pro Ala
 245 250 255
 Glu Ser Val Gln Glu Met Tyr Leu Gly Ile Ala Leu His Leu Ala Met
 260 265 270

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Pro	Glu	Gln	Lys	Glu	Arg	Met	Thr	Trp	Val	Lys	Lys	Phe	Tyr	Asp	Leu
	275						280					285			
Leu	Ser	Arg	Leu	Glu	Val	Thr	Met	Ala	Thr	Pro	Thr	Leu	Ser	Asn	Ala
	290					295					300				
Arg	Lys	Pro	Tyr	His	Gln	Leu	Ser	Ser	Cys	Phe	Ile	Asp	Thr	Val	Pro
305					310					315					320
Asp	Ser	Leu	Glu	Gly	Ile	Tyr	Arg	Ser	Ile	Asp	Asn	Phe	Ala	Met	Val
			325						330					335	
Ser	Lys	Phe	Gly	Gly	Gly	Met	Gly	Met	Tyr	Phe	Gly	Lys	Val	Arg	Ala
		340					345						350		
Ala	Gly	Gly	Asn	Ile	Arg	Gly	Phe	Lys	Gly	Val	Ala	Gly	Gly	Val	Ile
	355						360					365			
Arg	Trp	Met	Lys	Leu	Val	Asn	Asp	Thr	Ala	Val	Ala	Val	Asp	Gln	Leu
	370					375					380				
Gly	Met	Arg	Gln	Gly	Ala	Val	Ala	Val	Tyr	Leu	Asp	Val	Trp	His	Lys
385					390					395					400
Asp	Leu	Pro	Glu	Phe	Leu	Gln	Leu	Arg	Thr	Asn	Asn	Gly	Asp	Asp	Arg
				405					410					415	
Met	Lys	Ala	His	Asp	Ile	Phe	Pro	Ser	Val	Cys	Tyr	Pro	Asp	Leu	Phe
		420						425					430		
Trp	Lys	Met	Val	Lys	Glu	Asp	Leu	Asn	Gln	Pro	Trp	Tyr	Leu	Phe	Cys
	435						440						445		
Pro	Asn	Glu	Ile	Met	Thr	Ile	Lys	Gly	Tyr	Cys	Leu	Glu	Asp	Tyr	Tyr
	450					455					460				
Gly	Glu	Glu	Trp	Glu	Lys	Arg	Tyr	His	Asp	Cys	Val	Asn	Asp	Thr	Arg
465					470					475					480
Leu	Ser	Lys	Arg	Ser	Ile	Ser	Ile	Lys	Asp	Ile	Val	Arg	Leu	Val	Leu
			485						490					495	
Arg	Ser	Ala	Val	Glu	Thr	Gly	Thr	Pro	Phe	Thr	Phe	Asn	Arg	Asp	Thr
		500						505					510		
Val	Asn	Arg	Ala	Asn	Pro	Asn	Ala	His	Arg	Gly	Ile	Ile	Tyr	Cys	Ser
	515						520						525		
Asn	Leu	Cys	Thr	Glu	Ile	Ala	Gln	Asn	Met	Ala	Ala	Ile	Glu	Thr	Val
	530					535					540				
Ser	Thr	Glu	Ile	Arg	Thr	Glu	Glu	Gly	Asp	Thr	Val	Val	Val	Lys	Thr
545					550					555					560
Val	Arg	Pro	Gly	Asp	Phe	Val	Val	Cys	Asn	Leu	Ala	Ser	Leu	Ser	Leu
			565						570					575	
Gly	His	Leu	Pro	Leu	Glu	Asp	Glu	Gln	Ile	Lys	Glu	Lys	Val	Ser	
		580					585					590			
Thr	Val	Val	Arg	Ala	Leu	Asp	Asn	Val	Ile	Asp	Leu	Asn	Phe	Tyr	Pro
	595						600					605			
Leu	Pro	Phe	Ala	Gln	Ile	Thr	Asn	Gln	Arg	Tyr	Arg	Ser	Ile	Gly	Leu
	610					615					620				
Gly	Val	Ser	Gly	Tyr	His	His	Ala	Leu	Ala	Ile	Arg	Asn	Ile	Arg	Trp
625					630					635					640
Glu	Ser	Glu	Glu	His	Leu	Arg	Phe	Val	Asp	Arg	Val	Phe	Glu	Gln	Ile
			645						650					655	
Asn	Tyr	Ala	Ala	Ile	Glu	Ala	Ser	Ala	Asp	Leu	Ala	Lys	Glu	Lys	Gly
		660						665					670		
Arg	Tyr	Glu	Tyr	Phe	Glu	Gly	Ser	Asp	Trp	Gln	Thr	Gly	Ala	Tyr	Phe
	675						680					685			
Gly	Lys	Arg	Gly	Tyr	Thr	Ser	Pro	Glu	Trp	Asn	Arg	Leu	Ala	Ala	Lys
	690					695					700				
Val	Ala	Glu	Asn	Gly	Met	Arg	Asn	Ala	Tyr	Leu	Leu	Ala	Ile	Ala	Pro
705					710					715					720
Thr	Ser	Ser	Thr	Ser	Ile	Ile	Ala	Gly	Thr	Thr	Ala	Gly	Thr	Asp	Pro
			725						730					735	
Val	Met	Lys	Arg	Phe	Phe	Leu	Glu	Glu	Lys	Lys	Gly	Ala	Met	Leu	Pro


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<210> 9923
<211> 234
<212> PRT
<213> B.fragilis
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[illegible]

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<210> 9924
<211> 79
<212> PRT
<213> B.fragilis
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Arg Lys Arg Ile Lys Val Thr Thr Ala Ile His Met Ala Pro Ser Thr
1 5 10 15

Thr	Gly	Leu	Leu	His	Pro	Met	Glu	Leu	Val	Asp	Glu	Leu	Thr	Ser	Glu
		20					25					30			
Ser	Pro	Tyr	Met	Lys	Thr	Gly	Lys	Lys	Met	Ala	Glu	Val	Met	Lys	Pro
	35					40					45				
Gly	Ile	Ser	Lys	Gly	Thr	Pro	Val	Pro	Phe	Thr	Cys	Ser	Phe	Cys	Thr
	50				55					60					
Met	Ala	Val	Thr	Ile	Arg	Ala	Arg	Ile	Pro	Ile	Gly	Met	Leu	Thr	
65					70				75						

<210> 9925

<211> 470

<212> PRT

<213> B.fragilis

<400> 9925

Met	Cys	Thr	Phe	Ala	Pro	Gln	Ile	Ser	Met	Asn	Met	Gln	Glu	Ser	Lys
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Ser	Ile	Ile	Glu	Val	Asn	Gly	Val	Ser	Lys	Phe	Phe	Gly	Glu	Lys	Thr
		20				25						30			
Ala	Leu	Asp	His	Val	Thr	Leu	Asn	Val	Lys	Lys	Gly	Glu	Phe	Val	Thr
	35					40					45				
Ile	Leu	Gly	Pro	Ser	Gly	Cys	Gly	Lys	Thr	Thr	Leu	Leu	Arg	Leu	Ile
	50				55					60					
Ala	Gly	Phe	Gln	Thr	Ala	Ser	Glu	Gly	Glu	Ile	Lys	Ile	Ser	Gly	Lys
65					70				75					80	
Glu	Ile	Thr	Gln	Thr	Pro	Pro	His	Lys	Arg	Pro	Val	Asn	Thr	Val	Phe
			85					90						95	
Gln	Lys	Tyr	Ala	Leu	Phe	Pro	His	Leu	Asn	Val	Tyr	Asp	Asn	Ile	Ala
			100					105					110		
Phe	Gly	Leu	Lys	Leu	Lys	Lys	Met	Pro	Lys	Gln	Thr	Ile	Glu	Lys	Lys
		115					120					125			
Val	Lys	Ala	Ala	Leu	Lys	Met	Val	Gly	Met	Thr	Asp	Tyr	Glu	Tyr	Arg
	130					135					140				
Asp	Val	Asp	Ser	Leu	Ser	Gly	Gly	Gln	Gln	Gln	Arg	Val	Ala	Ile	Ala
145					150					155				160	
Arg	Ala	Ile	Val	Asn	Glu	Pro	Glu	Val	Leu	Leu	Leu	Asp	Glu	Pro	Leu
			165					170						175	
Ala	Ala	Leu	Asp	Leu	Lys	Met	Arg	Lys	Asp	Met	Gln	Met	Glu	Leu	Lys
		180						185					190		
Glu	Met	His	Lys	Ser	Leu	Gly	Ile	Thr	Phe	Val	Tyr	Val	Thr	His	Asp
		195					200					205			
Gln	Glu	Glu	Ala	Leu	Thr	Leu	Ser	Asp	Thr	Ile	Val	Val	Met	Ser	Glu
	210					215					220				
Gly	Arg	Ile	Gln	Gln	Ile	Gly	Thr	Pro	Ile	Asp	Ile	Tyr	Asn	Glu	Pro
225					230					235				240	
Ile	Asn	Ser	Phe	Val	Ala	Asp	Phe	Ile	Gly	Glu	Ser	Asn	Ile	Leu	Asn
			245						250					255	
Gly	Val	Met	Ile	His	Asp	Lys	Leu	Val	Arg	Phe	Cys	Asn	Thr	Glu	Phe
		260					265						270		
Glu	Cys	Val	Asp	Glu	Gly	Phe	Gly	Glu	Asn	Met	Pro	Val	Asp	Val	Val
	275						280					285			
Ile	Arg	Pro	Glu	Asp	Leu	Tyr	Ile	Phe	Pro	Val	Ser	Glu	Ala	Ala	Gln
	290					295					300				
Leu	Thr	Gly	Met	Val	Gln	Ser	Ser	Val	Phe	Lys	Gly	Val	His	Tyr	Glu
305					310					315				320	
Met	Thr	Val	Leu	Cys	Asn	Gly	Tyr	Glu	Phe	Leu	Val	Gln	Asp	Tyr	His
			325						330					335	
His	Phe	Glu	Val	Gly	Ala	Leu	Val	Gly	Leu	Leu	Val	Lys	Pro	Phe	Asp
			340					345					350		

Ile His Ile Met Lys Lys Glu Arg Val Cys Asn Thr Phe Glu Gly Lys
 355 360 365
 Leu Ile Asp Glu Thr His Val Glu Phe Leu Gly Cys Asn Phe Glu Cys
 370 375 380
 Ala Pro Val Thr Gly Ile Glu Ala Gly Ser Glu Val Lys Val Glu Val
 385 390 395 400
 Gly Phe Asp Asn Val Ile Leu Gln Asp Asn Glu Glu Asp Gly Ala Leu
 405 410 415
 Thr Gly Glu Val Lys Phe Ile Leu Tyr Lys Gly Asp His Tyr His Leu
 420 425 430
 Thr Val Leu Ser Asp Trp Asp Glu Asn Val Phe Val Asp Thr Asn Asp
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 Val Trp Asp Asp Gly Asp Arg Val Gly Ile Thr Ile Pro Pro Asp Gly
 450 455 460
 Ile Arg Val Ile Lys Asn
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<211> 204

<212> PRT

<213> B.fragilis

<400> 9926

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 Gln Leu Glu Lys Gln Leu Lys Val Arg Val Arg Thr Leu Pro Ile Ile
 20 25 30
 Lys Asn Lys Glu Ser Ala Leu Arg Met Glu Val Lys Arg Cys Lys Ser
 35 40 45
 Glu Ala Ala Asp Leu Glu Lys Arg Leu Glu Lys Gln Ile Gln Ala Tyr
 50 55 60
 Glu Ala Met Phe Ala Leu Trp Asn Glu Phe Asp Thr Ser Leu Ile Lys
 65 70 75 80
 Val Asn Asp Val His Leu Gly Val Lys Lys Ile Ala Gly Val Arg Val
 85 90 95
 Pro Leu Leu Glu Asn Val Asp Phe Glu Ile Arg Pro Tyr Ser Leu Phe
 100 105 110
 Asn Ala Pro Lys Trp Tyr Ala Asp Gly Ile His Leu Leu Lys Glu Leu
 115 120 125
 Ala His Thr Ala Ile Glu Arg Glu Phe Thr Leu Ala Lys Leu Gly Leu
 130 135 140
 Leu Glu His Ala Arg Lys Lys Thr Thr Gln Lys Val Asn Leu Phe Glu
 145 150 155 160
 Lys Val Gln Ile Pro Gly Tyr Gln Asp Ala Leu Arg Lys Ile Lys Arg
 165 170 175
 Phe Met Glu Asp Glu Glu Asn Leu Ser Lys Ser Ser Gln Lys Ile Leu
 180 185 190
 Lys Ser Gln Gln Glu Lys Arg Lys Glu Ala Glu Ala
 195 200

<210> 9927

<211> 439

<212> PRT

<213> B.fragilis

<400> 9927

Ala Asn Ile Val Asn Thr Glu Thr Lys Glu Gln Ile Leu Ala Ala Leu
 1 5 10 15
 Gly Asp Ile Leu Lys Asn Pro Glu Val Tyr Lys Asn Ser Glu Ile Trp

	20		25		30										
Ser	Lys	Leu	Ala	Glu	His	Leu	Ser	Pro	Val	Phe	Ile	Glu	Lys	Arg	Leu
	35						40					45			
Thr	Pro	Tyr	Asp	Leu	Leu	Asp	Glu	Pro	Leu	Gly	Tyr	Lys	Thr	Tyr	Gly
	50					55					60				
Ser	Lys	Tyr	Ile	Glu	Thr	Leu	Ala	Lys	Gln	Gln	Met	Asn	Leu	Ala	Met
65					70				75				80		
Arg	Leu	Pro	Ile	Thr	Leu	Ala	Gly	Ala	Leu	Met	Pro	Asp	Ala	His	Ala
			85					90					95		
Gly	Tyr	Gly	Leu	Pro	Ile	Gly	Gly	Val	Leu	Ala	Thr	Asp	His	Ala	Val
	100						105						110		
Ile	Pro	Tyr	Ala	Val	Gly	Val	Asp	Ile	Gly	Cys	Arg	Met	Asn	Leu	Thr
	115						120					125			
Leu	Phe	Asp	Ala	Gly	Glu	Asp	Phe	Leu	Lys	Arg	Tyr	Ser	His	His	Ile
	130					135					140				
Lys	Glu	Ala	Leu	Lys	Glu	Phe	Thr	His	Phe	Gly	Met	Asp	Gly	Gly	Leu
145					150					155					160
Ser	Phe	Ala	Gln	Glu	His	Glu	Val	Leu	Asp	Arg	Glu	Glu	Phe	Arg	Met
				165					170					175	
Thr	Glu	Leu	Leu	Arg	Gly	Leu	His	Gly	Lys	Ala	Val	Arg	Gln	Leu	Gly
	180						185						190		
Ser	Ser	Gly	Gly	Gly	Asn	His	Phe	Val	Glu	Phe	Gly	Lys	Met	Ser	Leu
	195						200					205			
Gln	Ala	Gly	Asn	Val	Leu	Gly	Val	Pro	Glu	Gly	Asn	Tyr	Val	Ala	Leu
	210					215					220				
Leu	Ser	His	Ser	Gly	Ser	Arg	Gly	Leu	Gly	Ala	Ala	Ile	Ala	Lys	His
225					230					235					240
Tyr	Ser	Met	Leu	Ala	Arg	Asp	Leu	Cys	Arg	Leu	Pro	Arg	Glu	Ala	Gln
			245						250					255	
His	Phe	Ala	Trp	Leu	Gly	Leu	Asp	Thr	Glu	Glu	Gly	Gln	Glu	Tyr	Trp
	260						265						270		
Leu	Ser	Met	Asn	Leu	Ala	Gly	Asp	Tyr	Ala	Arg	Ala	Cys	His	Glu	Arg
	275						280					285			
Ile	His	Leu	Asn	Leu	Ser	Lys	Ala	Leu	Gly	Leu	Lys	Pro	Leu	Ala	Asn
	290					295					300				
Val	Asn	Asn	His	His	Asn	Phe	Ala	Trp	Lys	Glu	Glu	Ile	Ala	Pro	Gly
305					310					315					320
Gln	Thr	Ala	Ile	Val	His	Arg	Lys	Gly	Ala	Thr	Pro	Ala	Gln	Lys	Gly
			325						330					335	
Gln	Pro	Gly	Leu	Ile	Pro	Gly	Ser	Met	Ala	Thr	Pro	Gly	Tyr	Leu	Val
	340						345						350		
Cys	Gly	Lys	Gly	Ile	Ser	Glu	Ala	Leu	Cys	Ser	Ala	Ser	His	Gly	Ala
	355					360					365				
Gly	Arg	Ala	Met	Ser	Arg	Gln	Lys	Ala	Lys	Asp	Asn	Phe	Thr	Arg	Ser
	370					375					380				
Ala	Leu	Arg	Lys	Tyr	Leu	Ser	Gln	Ala	Gly	Val	Thr	Leu	Ile	Gly	Gly
385					390					395					400
Ser	Val	Glu	Glu	Met	Pro	Leu	Ala	Tyr	Lys	Asp	Ile	Asp	Arg	Val	Met
			405						410				415		
Lys	Thr	Gln	Glu	Glu	Leu	Val	Glu	Val	Gln	Gly	Thr	Phe	Met	Pro	Cys
		420					425						430		
Ile	Val	Arg	Met	Asn	Lys	Glu									
	435														

<210> 9928

<211> 593

<212> PRT

<213> B.fragilis

<400> 9928

Asn	Leu	Val	Val	Asn	Ala	Cys	Leu	Cys	Tyr	Phe	Ala	Tyr	Ile	Phe	Cys
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Ile	Lys	His	Tyr	Phe	Ser	Ile	Asn	Asn	Ala	Tyr	Phe	Cys	Thr	Cys	Val
			20					25					30		
Ile	Lys	Arg	Val	Leu	Asn	Ile	Tyr	Met	Val	Lys	Asp	Leu	Leu	Thr	Pro
		35					40					45			
Asp	Tyr	Ile	Phe	Glu	Ala	Ser	Trp	Glu	Val	Cys	Asn	Lys	Val	Gly	Gly
	50					55					60				
Ile	Tyr	Thr	Val	Leu	Ser	Thr	Arg	Ala	Asn	Thr	Leu	Gln	Thr	Asn	Phe
65					70					75					80
Arg	Asp	Lys	Leu	Phe	Phe	Ile	Gly	Pro	Asp	Val	Trp	Gln	Gly	Lys	Asp
			85						90					95	
Asn	Pro	Leu	Phe	Ile	Glu	Ser	Asp	Asn	Leu	Cys	Ala	Ala	Trp	Lys	Glu
			100					105					110		
His	Ala	Leu	Lys	Lys	Asp	Asp	Leu	Ser	Val	Arg	Val	Gly	Arg	Trp	Asn
		115					120					125			
Ile	Pro	Gly	Glu	Pro	Ile	Val	Ile	Leu	Val	Asp	Phe	Gln	Pro	Phe	Phe
	130					135						140			
Glu	Lys	Lys	Asn	Glu	Ile	Tyr	Thr	Glu	Met	Trp	Asn	His	Phe	Gln	Val
145					150					155					160
Asp	Ser	Leu	His	Ala	Tyr	Gly	Asp	Tyr	Asp	Glu	Ala	Ser	Met	Phe	Ser
			165						170					175	
Tyr	Ala	Ala	Gly	Lys	Val	Val	Glu	Ser	Phe	Tyr	Arg	Tyr	Asn	Leu	Thr
		180						185						190	
Glu	Asn	Asp	Lys	Val	Ile	Tyr	Gln	Ala	His	Glu	Trp	Met	Thr	Gly	Leu
		195					200					205			
Gly	Ala	Leu	Tyr	Leu	Gln	Leu	Ala	Val	Pro	Glu	Ile	Gly	Thr	Ile	Phe
	210					215						220			
Thr	Thr	His	Ala	Thr	Ser	Ile	Gly	Arg	Ser	Ile	Ala	Gly	Asn	Asp	Lys
225					230					235					240
Pro	Leu	Tyr	Asp	Tyr	Leu	Phe	Ala	Tyr	Asn	Gly	Asp	Gln	Met	Ala	Gln
			245						250					255	
Glu	Leu	Asn	Met	Gln	Ser	Lys	His	Ser	Ile	Glu	Lys	Gln	Thr	Ala	His
			260					265						270	
His	Val	Asp	Cys	Phe	Thr	Thr	Val	Ser	Glu	Ile	Thr	Asn	Asn	Glu	Cys
		275					280						285		
Lys	Glu	Leu	Leu	Asp	Lys	Ala	Ala	Asp	Val	Val	Leu	Met	Asn	Gly	Phe
	290					295					300				
Glu	Asp	Asp	Phe	Val	Pro	Gln	Gly	Ser	Ala	Phe	Thr	Gly	Lys	Arg	Lys
305					310					315					320
Arg	Ala	Arg	Ala	Leu	Met	Leu	Asn	Val	Ala	Asn	Lys	Leu	Leu	Gly	Thr
			325						330					335	
His	Met	Asp	Asp	Asp	Thr	Leu	Ile	Ile	Gly	Thr	Ser	Gly	Arg	Tyr	Glu
			340					345					350		
Phe	Lys	Asn	Lys	Gly	Ile	Asp	Val	Phe	Leu	Glu	Ser	Leu	Asn	Arg	Leu
		355					360					365			
Asn	Arg	Asp	Lys	Asp	Leu	Gln	Lys	Asn	Val	Leu	Ala	Phe	Val	Asn	Val
	370					375						380			
Pro	Gly	Trp	Val	Gly	Glu	Pro	Arg	Glu	Asp	Leu	Gln	Thr	Arg	Leu	Lys
385					390					395					400
Ser	Lys	Glu	Lys	Phe	Asp	Thr	Pro	Leu	Glu	Val	Pro	Phe	Ile	Thr	His
			405						410					415	
Trp	Leu	His	Asn	Met	Thr	His	Asp	Gln	Val	Leu	Asp	Met	Leu	Lys	Tyr
		420						425					430		
Leu	Gly	Met	Gly	Asn	Arg	Pro	Glu	Asp	Lys	Val	Lys	Val	Ile	Phe	Val
		435					440					445			
Pro	Cys	Tyr	Leu	Asp	Gly	Lys	Asp	Gly	Ile	Leu	Asn	Lys	Glu	Tyr	Tyr
	450					455						460			

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Asp Leu Ile Leu Gly Glu Asp Leu Ser Val Tyr Pro Ser Tyr Tyr Glu
 465 470 475 480
 Pro Trp Gly Tyr Thr Pro Leu Glu Ser Val Ala Phe Arg Val Pro Thr
 485 490 495
 Ile Thr Thr Asp Leu Ala Gly Phe Gly Leu Trp Val Asn Ser Leu Lys
 500 505 510
 Asn Gln His Gly Ile Asp Asn Gly Val Glu Val Leu His Arg Ser Asp
 515 520 525
 Tyr Asn Tyr Ser Glu Val Ala Asp Gly Ile Lys Asp Thr Ile Ala Leu
 530 535 540
 Phe Ser Gly Lys Thr Asp Asn Glu Val Lys Glu Ile Arg Lys Gln Ala
 545 550 555 560
 Ala Ala Val Ala Glu Gln Ala Leu Trp Lys His Phe Ile Lys Tyr Tyr
 565 570 575
 Tyr Glu Ala Tyr Asp Ile Ala Leu Arg Asn Ala Met Lys Arg Gln Leu
 580 585 590
 Asn

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 <212> PRT
 <213> B.fragilis

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 Glu Leu Arg Val Lys Arg Leu Ser Val Phe Phe Ser Ser Arg Lys Ser
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 Leu Leu Leu Ile Val Val Tyr Ala Phe Thr Asp Asp Ser Gly His Leu
 35 40 45
 Thr Leu Glu Asn Phe Ala Lys Phe Phe Gln His His Glu Ala Ile Asn
 50 55 60
 Thr Phe Val Tyr Ser Ile Gly Ile Ala Ile Ile Thr Thr Ile Val Cys
 65 70 75 80
 Ile Leu Leu Gly Tyr Pro Ala Ala Trp Ile Leu Ser Asn Ala Lys Leu
 85 90 95
 Asn Arg Ser Lys Thr Met Val Val Leu Phe Ile Leu Pro Met Trp Val
 100 105 110
 Asn Ile Leu Val Arg Thr Leu Ala Thr Val Ala Leu Phe Asp Phe Phe
 115 120 125
 Ser Val Pro Leu Gly Glu Gly Ala Leu Ile Phe Gly Met Val Tyr Asn
 130 135 140
 Phe Ile Pro Phe Met Ile Tyr Pro Ile Tyr Asn Thr Leu Gln Lys Met
 145 150 155 160
 Asp His Ser Tyr Ile Glu Ala Ala Gln Asp Leu Gly Ala Asn Pro Val
 165 170 175
 Gln Val Phe Phe Lys Ala Val Leu Pro Leu Ser Met Pro Gly Val Met
 180 185 190
 Ser Gly Ile Met Met Val Phe Met Pro Thr Ile Ser Thr Phe Ala Ile
 195 200 205
 Ala Glu Leu Leu Thr Met Asn Asn Ile Lys Leu Phe Gly Thr Thr Ile
 210 215 220
 Gln Glu Asn Ile Asn Asn Ser Met Trp Asn Tyr Gly Ala Ala Leu Ser
 225 230 235 240
 Leu Ile Met Leu Leu Ile Ala Ala Thr Ser Leu Phe Ser Thr Asp
 245 250 255
 Asp Lys Asp Asn Thr Asn Glu Gly Gly Gly Leu Trp
 260 265

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 Val Ala Met Val Leu Gly Val Ser Cys Val Ala Val Thr Gly Ser Leu
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 Thr Trp Gln Leu Ser Val Val Glu Ala Val Ala Ser Met Val Leu Val
 20 25 30
 Thr Asn Ile Ser Phe Tyr Phe Phe Leu Asn Leu Cys Asp Thr Tyr Met
 35 40 45
 Leu Leu Phe Arg Ile Ser Gly Val Trp Glu Glu Met Trp Leu Met Cys
 50 55 60
 Gln Tyr Ser Val Ser Ile Ser Val
 65 70

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 <212> PRT
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<400> 9931
 Gln Ile Leu Leu Ile Val Leu Ile Ile Phe Ser Met Asn Ile Phe Ile
 1 5 10 15
 Ala Gly Ile Ser Tyr Asn Leu Ser Asn Ala Asp Leu Gly Glu Leu Phe
 20 25 30
 Glu Glu Phe Gly Glu Val Ile Ser Ala Lys Ile Val Met Asp Arg Glu
 35 40 45
 Thr Gly Arg Ser Lys Gly Phe Gly Phe Val Glu Met Pro Asn Asp Glu
 50 55 60
 Glu Gly Asn Ala Ala Ile Ala Ala Leu Asn Glu Lys Glu Ile Asp Gly
 65 70 75 80
 Lys Thr Leu Ala Val Ser Val Ala Arg Pro Arg Glu Glu Gly Pro Arg
 85 90 95
 Arg Asn Ser Asn Tyr Gly Gly Gly Asn Arg Gly Gly Tyr Gly Asn Asn
 100 105 110
 Arg Gly Gly Gly Tyr Gly Gly Gly Asn Arg Gly Gly Gly Tyr Gly Gly
 115 120 125
 Gly Arg Asp Arg Tyr
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<210> 9932
 <211> 688
 <212> PRT
 <213> B.fragilis

<400> 9932
 Asn Thr Leu Phe Glu Ala Ile Tyr Gly Leu Ser Arg Phe Glu Val Gly
 1 5 10 15
 Ser Leu Leu Ala Gln Ile Ala Tyr Ile Cys Cys His Ser Phe Ile Tyr
 20 25 30
 Cys Thr Ser Tyr Met Arg Tyr Cys Ile Leu Ile Phe Gly Phe Ile Leu
 35 40 45
 Leu Phe Phe Leu Pro Val Gly Cys Lys Gln Ser Ser Thr Val Thr Pro
 50 55 60
 Leu Ser Phe Lys Glu Trp Met Thr His His Pro Gly Glu Cys Ile Glu
 65 70 75 80

His	Tyr	Met	Gly	Leu	His	Asp	Ser	Leu	Phe	Glu	Ala	Gly	Arg	Tyr	Asp
				85					90					95	
Met	Leu	Thr	Asp	Ile	Tyr	Ser	Gly	Met	Phe	Leu	Tyr	Met	Pro	Ser	Asp
			100				105						110		
Pro	Asp	Gly	Asn	Pro	Asp	Thr	Leu	Arg	Arg	Gln	Leu	Leu	Arg	Ile	Met
		115					120					125			
Pro	Leu	Tyr	Asn	Gln	Val		Leu	Ser	Lys	Thr	Gly	Ala	Tyr	Glu	Ala
	130						135					140			
Val	Gln	Leu	Leu	Asp	Ser	Ile	Arg	Leu	Ser	Gly	His	Pro	Phe	Leu	Thr
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Gly	Tyr	Cys	Ala	Tyr	Pro	Leu	Trp	Ala	Phe	Glu	Ala	Gln	Asn	Ser	Leu
				165					170					175	
Met	Thr	Asp	Asp	Asn	Arg	Arg	Thr	Glu	Ala	Leu	Ala	Asp	Ser	Phe	Ala
			180					185					190		
Val	Leu	Leu	Pro	Pro	Asp	Asp	Gln	Ser	Val	Val	Met	Leu	Cys	Cys	His
		195					200					205			
Met	Val	Ser	Trp	Ala	Tyr	His	Phe	Ser	Ser	Ala	Arg	Pro	Asn	Val	Ala
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Cys	Arg	Met	Gln	Glu	Arg	Ala	Val	Glu	Ala	Tyr	Arg	Arg	Gly	Gly	Glu
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Thr	Gln	Asp	Val	Gly	Ala	Ile	Leu	Ala	Arg	Leu	Gly	Tyr	Tyr	Tyr	Arg
				245					250					255	
Arg	Glu	Gly	Arg	Tyr	Val	Lys	Ala	Val	Asp	Leu	Ser	Leu	Ala	Ala	Val
			260					265					270		
Glu	Trp	Tyr	Asp	Lys	His	Pro	Gly	Ile	Ala	Thr	Asp	Gly	Met	Ile	Arg
		275					280					285			
Ala	Tyr	Ala	Asp	Leu	Ala	Ala	Leu	Tyr	Ser	Thr	Leu	Ala	Leu	Thr	Glu
	290					295					300				
Lys	Ala	Leu	Glu	Ile	Asn	Ala	Arg	Val	Ile	Arg	Met	Ala	Ala	Arg	Glu
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Asp	Ser	Met	Ala	Leu	Cys	Gly	Ala	Tyr	Arg	Val	Arg	Ser	Ser	Phe	Phe
				325					330					335	
Met	Asp	Leu	Glu	Gln	Val	Asp	Ser	Ala	Ala	Phe	Tyr	Leu	Gly	Lys	Glu
			340					345					350		
Arg	Glu	Val	Ala	Gln	Arg	Met	Gly	Glu	Arg	Ser	Leu	Lys	Thr	Trp	Leu
		355					360					365			
Arg	Asp	Arg	Ala	Lys	Tyr	Trp	Leu	Gln	Met	Cys	Pro	Asp	Ser	Asn	Ala
	370					375					380				
Ala	Ala	Leu	Arg	Asp	Met	Glu	Ala	Ile	Phe	Ala	Asp	Ser	Ala	Gly	Val
385					390					395					400
Arg	Pro	Ala	Thr	His	Ser	Gly	Thr	Arg	Tyr	Trp	Leu	Gly	Leu	Ala	Leu
				405					410					415	
Val	Arg	Asp	Gly	Gln	Glu	Glu	Arg	Gly	Leu	Ala	Met	Met	Glu	Gln	Ala
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 Ile Ser Ile His Gln Glu Leu Asn Gly Arg Tyr Glu Ser Leu Asn Asn
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 Glu Leu Glu Lys Val Ala His Ala Asp Val Ile Asp Asn Val Arg Gln
 580 585 590
 Lys Leu Asn Pro Met Leu Leu Ser Gly Asp Asp Glu Ile Arg Phe Arg
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 Gln Ser Phe Ala Ala Leu Tyr Pro His Tyr Leu Pro Val Leu Arg Cys
 610 615 620
 Gln Cys Pro Glu Leu Thr Arg Asn Asp Glu Leu Leu Cys Met Leu Ile
 625 630 635 640
 Arg Leu Asn Gln Ser Thr Asp Glu Ile Ala Leu Ala Leu Gly Ile Ser
 645 650 655
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 35 40 45
 Lys Lys Asn Asp Ser Ala Phe Gly Asn Phe Leu Val Leu Thr Ala Leu
 50 55 60
 Pro Gly Thr Gln Gly Leu Tyr Gly Phe Ala Gly Tyr Phe Met Phe Gln
 65 70 75 80
 Thr Ile Phe Gly Ile Leu Thr Pro Gln Ile Thr Ala Ile Gln Ala Ser
 85 90 95
 Ala Val Leu Gly Ala Gly Ile Ala Leu Gly Leu Val Ala Leu Phe Ser
 100 105 110
 Ala Ile Arg Gln Gly Gln Val Cys Ala Asn Gly Ile Ala Ala Ile Gly
 115 120 125
 Gln Gly His Asn Val Phe Ser Asn Thr Leu Ile Leu Ala Val Phe Pro
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 Glu Leu Tyr Ala Ile Val Ala Leu Ala Ala Thr Phe Leu Ile Gly Ser
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 Ala Leu Ala

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 Arg Ile Lys Ile Lys Gly Leu Ser Leu Asp Val Ser Ala Val Ile Phe
 35 40 45

Ile Ala Leu Leu Phe Gly His Phe Gly Val Ile Ile Pro Lys Glu Leu
 50 55 60
 Gly Asn Phe Gly Leu Val Leu Phe Ile Phe Thr Ile Gly Ile Gln Ala
 65 70 75 80
 Gly Pro Gly Phe Phe Asp Ser Phe Arg Ser Lys Gly Lys Thr Leu Ile
 85 90 95
 Ile Ile Thr Met Leu Ile Ile Ser Ser Ala Cys Leu Thr Ala Val Gly
 100 105 110
 Leu Lys Tyr Ala Phe Gly Ile Asp Thr Pro Ser Val Val Gly Leu Val
 115 120 125
 Ala Gly Ala Leu Thr Ser Thr Pro Gly Leu Ala Val Ala Ile Asp Ser
 130 135 140
 Thr Asn Ser Pro Leu Ala Ser Ile Ala Tyr Gly Ile Ala Tyr Pro Phe
 145 150 155 160
 Gly Val Ile Gly Val Ile Leu Phe Val Lys Leu Leu Pro Lys Ile Met
 165 170 175
 Arg Ile Asp Leu Asp Lys Glu Ala Arg Arg Leu Glu Ile Glu Arg Arg
 180 185 190
 Gly Gln Phe Pro Glu Leu Gly Thr Cys Ile Tyr Arg Ile Thr Asn Pro
 195 200 205
 Ser Val Phe Gly Arg Ser Leu Met Gln Ile Asn Ala Arg Ala Met Thr
 210 215 220
 Gly Ala Val Ile Ser Arg Leu Lys His Gln Glu Ile Ser Ile Pro
 225 230 235 240
 Thr Ala His Thr Val Leu His Glu Gly Asp Tyr Ile Gln Ala Val Gly
 245 250 255
 Ser Glu Glu Ala Leu Thr Gln Leu Ala Val Leu Val Gly Glu Arg Glu
 260 265 270
 Glu Gly Glu Leu Pro Leu Glu Asn Thr Gln Glu Ile Glu Ser Leu Leu
 275 280 285
 Leu Thr Lys Lys Asp Met Ile Asn Lys Gln Leu Gly Asp Leu Asn Leu
 290 295 300
 Met Lys Asn Phe Gly Cys Thr Val Thr Arg Val Arg Arg Ser Gly Ile
 305 310 315 320
 Asp Leu Ser Pro Ser Pro Asp Leu Ala Leu Lys Phe Gly Asp Lys Leu
 325 330 335
 Met Val Val Gly Glu Lys Glu Gly Ile Lys Gly Val Ala Arg Leu Leu
 340 345 350
 Gly Asn Asn Ala Lys Lys Leu Ser Asp Thr Asp Phe Phe Pro Ile Ala
 355 360 365
 Met Gly Ile Val Leu Gly Val Leu Phe Gly Lys Leu Asn Ile Ser Phe
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 Pro Gly Gly Leu Ser Phe Ser Pro Gly Leu Thr Gly Gly Val Leu Met
 385 390 395 400
 Val Ala Leu Leu Leu Ser Ala Ile Gly Lys Thr Gly Pro Ile Leu Trp
 405 410 415
 Ser Met Ser Gly Pro Ala Asn Gln Leu Leu Arg Gln Leu Gly Leu Leu
 420 425 430
 Leu Phe Leu Ala Glu Val Gly Thr Ser Ala Gly Lys Asn Leu Val Ala
 435 440 445
 Thr Phe Gln Glu Ser Gly Leu Leu Phe Gly Val Gly Ala Ala Ile
 450 455 460
 Thr Leu Val Pro Met Leu Ile Ala Ala Phe Val Gly Arg Leu Val Phe
 465 470 475 480
 Lys Ile Ser Leu Leu Asp Leu Leu Gly Thr Ile Thr Gly Gly Met Thr
 485 490 495
 Ser Thr Pro Gly Leu Ala Ala Ala Asp Ser Met Val Asp Ser Asn Ile
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 Pro Ser Val Ala Tyr Ala Thr Val Tyr Pro Ile Ala Met Val Phe Leu

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 Arg Glu Asn Ser Tyr Ile Ser Ala Val Ser Tyr Val Leu Asp Tyr Val
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 Leu
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 20 25 30
 Ser Thr Phe Ser Val Ile Lys Asp Gly Thr Val Gly Leu Trp Phe Glu
 35 40 45
 Gln Ala Thr His Ile Ile Ala Gln Ala Ala Pro Asn Lys Gly Phe Lys
 50 55 60
 Phe Met Phe Tyr Cys Phe Phe Met Val Lys Glu
 65 70 75

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 <212> PRT
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 Glu Gly Phe Pro Leu Pro Asp Phe Pro Val Pro Asp Gly Val Gly Ile
 20 25 30
 Phe Met Arg Glu Met Val Phe Phe Thr Glu Cys Ala Lys Pro Val Ile
 35 40 45
 Ala Leu Asp Arg Phe Phe Phe Phe Phe Leu Asn His Tyr Asp Met Ile
 50 55 60
 Ile Phe Leu
 65

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			20					25					30		
Trp	Phe	Ser	Leu	Ile	Met	Gly	Ser	Lys	Asp	Ile	Gln	Asn	Phe	Val	Phe
		35					40					45			
Leu	Leu	Leu	Ile	His	Phe	Ile	Asn	Tyr	Leu	Phe	Ile	Val	Ala	Cys	His
	50					55					60				
Tyr	Arg	Thr	Phe	Gln	Leu	Gln	Gly	Ile	Ser	Gln	Phe	Pro	Phe	Phe	His
65					70					75					80
Ala	Glu	Arg	Phe	Gly	Lys	Gln	Arg	Lys	Ser	Phe	Asn	Leu	Phe	Val	Met
				85					90					95	
Gly	Lys	Leu	Leu	Leu	Gln	Arg	Ile	Asp	Thr	Cys	Ala	Glu	Gln	Ser	Ser
			100					105					110		
Asn	Phe	Arg	Met	Leu	Gln	Gln	Phe	Gly	His	Ile	Phe	Val	Phe	Asp	Ala
		115					120					125			
Phe	Leu	Phe	Gly	Ile	Leu	Phe	His	Lys	Thr	Val	Tyr	Arg	Tyr	Asn	Gln
	130					135					140				
Cys	Arg	Tyr	Lys	Leu	Thr	Leu	Val	Gly	Asn	Asn	Ser	Tyr	Leu	Ile	Asp
145					150					155					160
Ile	Thr	Val	Asp	Asn	Gln	Phe	Gly	Phe	Gln	Cys	Leu	Arg	Ser	Asp	Ile
				165					170					175	
Phe	Ser	Val	Arg	Cys	Leu	Lys	Gln	Val	Phe	Asp	Thr	Leu	Cys	Gln	Ile
		180						185					190		
Gln	Leu	Pro	Ile	Phe	Lys	Ile	Ala	Gly	Ile	Thr	Gly	Met	Lys	Pro	Thr
		195					200					205			
Phe	Phe	Ile	Asp	Gly	Cys	Ser	Arg	Arg	Phe	Arg	Leu	Phe	Ile	Ile	Pro
	210					215					220				
Phe	Arg	Asp	Gly	Leu	Ser	Thr	Lys	Gln	Asn	Leu	Val	Ile	Phe	Ala	Asp
225					230					235					240
Leu	His	Phe	Tyr	Leu	Arg	His	His	Leu	Thr	Tyr	Arg	Thr	Asn	Ile	Ile
				245					250					255	
Thr	Arg	Leu	Arg	Ser	Thr	Arg	Asn	Ser	Cys	Arg	Arg	Phe	Cys	Gln	Thr
		260						265					270		
Ile	Ser	Asp	Gln	His	Ile	Asp	Thr	His	Arg	Met	Tyr	Lys	Leu	Ala	Asn
	275					280						285			
Phe	Ile	Gly	Asn	Ser	Ser	Thr	Gly	Cys	Arg	Glu	Glu	Val	Thr	Val	Leu
290						295					300				
Tyr	Ser	Asp	Gly	Leu	Phe	Gln	Gln	Ser	Ile	Asp	Ser	Leu	Leu	Ile	Lys
305					310					315					320
Leu	Ile	Phe	Gln	Leu	Asn	His	Ser	Gly	Arg	Arg	Leu	Thr	His	Pro	Gln
			325						330					335	
Ile	Ile	Gln	Ile	Met	Asp	Thr	Ala	Tyr	Phe	Asn	Ser	Ile	Gln	His	Gln
			340					345					350		
His	Phe	Phe	Tyr	Ser	Gly	Gly	Leu	Gly	Tyr	Phe	Phe	Leu	Asn	Ala	Gly
		355					360					365			
Val	His	Leu	Leu	Pro	Lys	Thr	Arg	Asp	Thr	Thr	His	Gln	Cys	Arg	Thr
	370					375					380				
Asp	Phe	Phe	Asn	Gly	Cys	Leu	Asp	Ile	Gly	Arg	Thr	Lys	Ile	Asp	Ala
385					390					395					400
Asp	Leu	Tyr	Ala	Leu	Met	His	Thr	Glu	Ile	Ser	Pro	Cys	Leu	Leu	Lys
			405						410					415	
His	Met	Gly	Gln	Arg	Gln	Glu	Val	His	Arg	Asn	Ile	Leu	Ile	Gly	His
			420					425					430		
Ile	Tyr	Gln	Thr	Asp	Ile	Met	Asn	Thr	Glu	Cys	Phe	Gln	Ile	Ala	Arg
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Met	Met	Gln	His	Asp	Ser	Phe	Arg	Phe	Ala	Arg	Ser	Thr	Gly	Arg	Ile

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Gln Asp Val Cys Gln	Ile Leu Gly Thr Gly	Thr Cys Arg Thr Phe Phe		
465	470	475	480	
His Tyr Phe Ile Val	Trp Gln Ile Phe Ser Phe Ser	Gln Lys Leu Val		
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Ile Val Asn Arg Thr	His Ile Thr Arg Ile Phe His Tyr	Arg Arg Ile		
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<212> PRT

<213> B.fragilis

<400> 9939

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Lys Gln Gln Thr Lys Asn Lys Thr Met Arg Thr Tyr Arg Phe Met Phe	
	35 40 45
Pro Val Leu Leu Ala Met Thr Ala Thr Gly Ser Leu Thr Ala Gly Pro	
	50 55 60
Ser Asp Lys Gly Ser Ser Gly Ile Arg Phe Pro Glu Val Asn Gln Val	
65	70 75 80
Lys Ile Glu Asp Thr Phe Trp Lys Pro Lys Leu Asn Leu Trp Gln Lys	
	85 90 95
Val Thr Val Asn Asp Val Phe Asp Lys Phe Glu Gly Lys His Leu Glu	
	100 105 110
His Pro Gly Glu Phe Cys Asn Thr Phe Glu Asn Phe Asp Arg Val Ala	
	115 120 125
Lys Gly Glu Arg Asn Ile Gly Arg His Ala Gly Ala Pro Trp Phe Asp	
	130 135 140
Gly Leu Val Tyr Glu Thr Ile Arg Gly Val Ala Asp Leu Met Ala Arg	
145	150 155 160
Gln Ser Asp Ala Ala Leu Glu Lys Arg Val Asp Gly Tyr Ile Asp Arg	
	165 170 175
Ile Ala Val Ala Gln Ala Ser Glu Pro Asn Gly Tyr Ile Asp Thr Tyr	
	180 185 190
Thr Gln Leu Met Glu Ala Asp His Gln Trp Gly Glu Arg Gly Gly Met	
	195 200 205
Leu Arg Trp Gln His Asp Val Tyr Asn Ala Gly Met Leu Val Glu Ala	
	210 215 220
Gly Val His Tyr Tyr Asn Ala Thr Gly Lys Thr Lys Leu Leu Glu Val	
225	230 235 240
Ala Thr Arg Cys Ala Asn Leu Met Ala Glu Tyr Met Gly Thr Phe Pro	
	245 250 255
Lys Lys Asn Val Val Pro Ala His Ser Gly Pro Glu Glu Ala Leu Val	
	260 265 270
Lys Leu Tyr Thr Leu Tyr Arg Asp Asn Pro Gly Leu Lys Lys Gln Ile	
	275 280 285
Asn Val Pro Val Val Glu Arg Glu Tyr Leu Arg Leu Ala Glu Phe Trp	
	290 295 300
Ile Glu Gly Arg Gly Lys His Cys Gly Phe Pro Leu Trp Gly Thr Trp	
305	310 315 320
Gly Asn Pro Ala Ala Glu Gln Trp Ile Arg Asp Arg Lys Tyr Glu Ala	
	325 330 335
Pro Glu Phe Gly Asn His Thr Arg Pro Ser Trp Gly Asp Tyr Ala Gln	

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Lys Thr Leu Phe Thr Thr Asp Tyr Thr Asp Tyr His Arg Leu Ser Thr

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Trp	Ile	Ile	Asn	Asp	Leu	Glu	Leu	Ile	Leu	Cys	Tyr	Ser	Val	Ser	Ser
	35		40		45										
Val	Val	Ser	Phe	Asp	Thr	Arg	Pro	Leu	Phe	His	Leu	Lys	Arg	Lys	Phe
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 Leu Leu Pro Ala Trp Gln Leu Gly Thr Ile Val Asn Lys Gln Ile Ile
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 Lys Gln Ala Asn Leu Asn Thr Cys Val Phe Met Ile Leu Phe Tyr Asn
 35 40 45
 Lys Ile Ile Tyr Leu Asn Leu Phe Tyr Ala Ser Gly Leu Gln Glu Ser
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 Tyr Cys Leu Arg Tyr Ala Ser Gly
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 <212> PRT
 <213> B.fragilis

<400> 9942
 Ile Asp Ala Thr Pro Ile Val Gln Lys Phe Ser Leu Leu His Ile Leu
 1 5 10 15
 Pro Asp Asp Ala Leu Ser Tyr Gly Phe Val Ser Ser Lys Ser Pro Trp
 20 25 30
 Gln Leu Leu Ile Ala Ile Ala Val Ala Val Asn Met Asn Asn Leu Phe
 35 40 45
 Asn Ser Phe Ile Arg Phe Gln Asp Leu Phe Arg Met Leu Tyr Trp His
 50 55 60
 Leu Leu Gln Leu Ser
 65

<210> 9943
 <211> 363
 <212> PRT
 <213> B.fragilis

<400> 9943
 Leu Ile Arg Thr Gly Met Tyr Phe Tyr Tyr Val Thr Lys His Ile Arg
 1 5 10 15
 Tyr Pro Asp Ser Ser Cys Thr Leu Leu Arg Phe Leu Ser Tyr Leu Cys
 20 25 30
 Ser Thr Lys Asn Lys Ser Met Lys Arg Asn Glu Ser Lys Tyr Lys Gln
 35 40 45
 Val Val Asn His Val Ile Asp Gly Ile Asn Asn Gly Ser Tyr Lys Lys
 50 55 60
 Gly Asp Trp Ile Leu Ser Ile Asn Glu Phe Arg Lys Asn Tyr Asn Leu
 65 70 75 80
 Ser Arg Asp Thr Val Phe Ala Gly Leu Ser Glu Leu Lys Ser Lys Gly

[illegible]

<400> 9944

Asn	Leu	Asn	Phe	Ile	Thr	Met	Lys	Lys	Leu	Leu	Ile	Phe	Thr	Leu	Leu
1				5					10					15	
Leu	Cys	Cys	Thr	Val	Lys	Ala	Leu	Ser	Tyr	Thr	Glu	Arg	Asn	Tyr	Leu
			20					25					30		
Gln	Lys	Gln	Ala	Asn	Val	Ser	Ser	Leu	Gln	Glu	Val	Leu	Ile	Leu	Asn
		35					40					45			
Gln	Gln	Trp	Val	Thr	Tyr	Pro	Ala	Tyr	Thr	Asp	Arg	Thr	Gly	Trp	Asp
	50					55				60					
Thr	Phe	Leu	Gly	Ser	Phe	Lys	Asn	Glu	Cys	Ile	Leu	Arg	Gly	Glu	Lys
65				70					75					80	
Gln	Leu	Asn	Tyr	Gln	Trp	Gln	Val	Val	Lys	Ala	Thr	Asp	Tyr	Met	Glu
			85					90						95	
Phe	Glu	Arg	Ser	Gly	Asn	Arg	Ser	Ile	Met	Glu	Thr	Pro	Phe	Ala	Asn
			100				105					110			
Asn	Asn	Asn	Ala	Ile	Ala	Asp	Leu	Leu	Leu	Ala	Glu	Leu	Ala	Glu	Gly
		115					120				125				
Lys	Gly	Arg	Phe	Ile	Asp	Gln	Leu	Ile	Asn	Gly	Val	Tyr	His	Ser	Cys

130		135		140
Glu Met Thr Ser Trp	Ala Leu Ala Ala His	Leu Asn Ala Gln Gln Ser		
145	150	155		160
His Arg Ser Leu Pro	Asp Phe Lys Glu Asn Ile Ile	Asp Leu Thr Ala		
	165	170		175
Gly Asp Leu Gly Ser	Leu Leu Ala Trp Thr Tyr Tyr Tyr	Met His Lys		
	180	185		190
Glu Phe Asp Lys Leu	Asn Pro Ala Ile Ser Glu Arg Leu Arg	His Thr		
	195	200		205
Leu Gln Gln Arg Ile	Leu Asp Pro Tyr Met Asn Asn Asp	His Phe Trp		
	210	215		220
Trp Met Ala Val Asn	Tyr Arg Pro Gly Met Leu Val Asn Asn	Trp Asn		
225	230	235		240
Pro Trp Cys Asn Ser	Asn Ala Leu Met Cys Phe Met Leu Leu	Glu Asn		
	245	250		255
Asp Lys Glu Met Leu	Ala Lys Ala Ile Tyr Arg Ser Met Val	Ser Val		
	260	265		270
Asp Lys Phe Ile Asn	Tyr Thr His Thr Asp Gly Ala Cys Glu Glu	Gly		
	275	280		285
Pro Ser Tyr Trp Gly	His Ala Ala Gly Lys Met Phe Asp Tyr Leu	Glu		
	290	295		300
Leu Leu Ser Ala Val	Thr Gly Gly Thr Val Ser Ile Phe Asp Asn	Pro		
305	310	315		320
Met Ile Lys Asn Met	Gly Glu Tyr Ile Ser Arg Ser Tyr Val Gly Lys			
	325	330		335
Gly Trp Val Val Asn	Phe Ala Asp Ala Ser Ala Lys Gly Ser Gly Asp			
	340	345		350
Ala Pro Leu Ile Phe	Arg Tyr Gly Lys Ala Val Asn Ser Asn Glu Met			
	355	360		365
Lys Gly Phe Ala Ala	Met Ile Asn Thr Asn Lys Leu Pro Ser Gly Arg			
	370	375		380
Asp Ile Tyr Arg Thr	Leu Ala Ala Ile Lys Ile Ala Asn Glu Leu Lys			
385	390	395		400
Glu Thr Gln Ala Ala	His Leu Thr Pro Pro Phe Ser Trp Tyr Pro Glu			
	405	410		415
Thr Glu Phe Cys Tyr	Ile Thr Asp Asn Lys Gly Asn Phe Leu Ala Ala			
	420	425		430
Lys Gly Gly Tyr Asn	Asp Glu Ser His Asn His Asn Asp Ala Gly Thr			
	435	440		445
Phe Ser Phe Trp Ile	Asp Gln Thr Pro Phe Leu Ile Asp Ala Gly Val			
	450	455		460
Gly Thr Tyr Thr Arg	Gln Thr Phe Ser Lys Asp Arg Tyr Thr Ile Trp			
465	470	475		480
Thr Met Gln Ser Asn	Tyr His Asn Leu Pro Leu Ile Asn Gly Val Pro			
	485	490		495
Gln Lys Tyr Gly Ala	Thr Tyr Lys Ala Thr His Val Gln Ala Asp Lys			
	500	505		510
Arg Lys Asn Thr Phe	Thr Ala Asn Ile Ala Thr Ala Tyr Pro Ala Glu			
	515	520		525
Ala Glu Val Glu Ser	Trp Ile Arg Ser Tyr Ser Leu Gln Lys Gly Gln			
	530	535		540
Leu Arg Ile Ser Asp	Ser Phe Arg Leu Thr Thr Ala Lys Gln Pro Asn			
545	550	555		560
Gln Ile Asn Phe Met	Thr Trp Gly Gln Val Asn Thr Glu Ile Pro Gly			
	565	570		575
Lys Ile Gln Leu Glu	Val Lys Gly Lys Lys Ala Val Ile Glu Tyr Asp			
	580	585		590
Lys Gln Leu Phe Asp	Val Lys Thr Glu Ile Ile Pro Leu Thr Asp Thr			
	595	600		605

Arg Leu Ser Asn Val Trp Gly Lys Ser Ile Cys Arg Ile Thr Leu Thr
 610 615 620
 Ala Thr Asn Ile Tyr Lys Thr Gly Asn Tyr Ser Phe Thr Ile Lys Lys
 625 630 635 640
 Gln

<210> 9945
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 9945
 Tyr Met Ser Gln Glu Ile Glu Arg Lys Phe Leu Val Ser Gly Asp Tyr
 1 5 10 15
 Lys Ser Gln Ala Phe Asp Gln Ser Arg Ile Val Gln Gly Tyr Ile Ser
 20 25 30
 Ser Ala Arg Gly Arg Thr Val Arg Val Arg Ile Arg Asp Gly Lys Gly
 35 40 45
 Tyr Leu Thr Ile Lys Gly Ala Ser Asp Ala Ser Gly Ile Ser Arg Tyr
 50 55 60
 Glu Trp Glu Lys Glu Leu Ser Leu Ala Glu Ala Glu Leu Met Lys
 65 70 75 80
 Leu Cys Glu Pro Gly Val Ile Asp Lys Thr Arg Tyr Leu Val Arg Ser
 85 90 95
 Gly Lys His Ile Phe Glu Val Asp Glu Phe Tyr Gly Glu Asn Glu Gly
 100 105 110
 Leu Val Val Ala Glu Val Glu Leu Gly Ser Glu Asp Glu Val Phe Val
 115 120 125
 Lys Pro Gly Phe Ile Gly Glu Glu Val Thr Gly Asp Ile Arg Tyr Tyr
 130 135 140
 Asn Ser Gln Leu Met Lys Lys Pro Tyr Thr Thr Trp Leu
 145 150 155

<210> 9946
 <211> 393
 <212> PRT
 <213> B.fragilis

<400> 9946
 Pro Asp Gly Gln Gln Ser Pro Cys Leu Trp Ala Gln Ser Arg Thr Gly
 1 5 10 15
 Thr Ala Asp Arg Glu Ile Trp Val Lys Thr Leu Val Arg Leu Ala Asp
 20 25 30
 Pro Val Leu Ser Asn Leu Ala Asn Glu Thr Leu Lys Lys Glu Met Pro
 35 40 45
 Tyr Glu Ser Leu Ala Pro Asn Arg Gln Arg Phe Ser Tyr Leu Glu Ala
 50 55 60
 Val Gly Arg Thr Val Cys Gly Ile Ala Pro Trp Leu Glu Leu Gly Glu
 65 70 75 80
 Asp Asp Thr Pro Glu Gly Gln Leu Arg Lys Lys Tyr Ile Glu Leu Thr
 85 90 95
 Ala Lys Gly Ile Ser Asn Ala Val Asn Pro Ser Ser Pro Asp Tyr Leu
 100 105 110
 Ile Phe Gly Glu Pro Ser Gln Pro Leu Val Asp Ala Ala Phe Leu Ala
 115 120 125
 Glu Gly Leu Leu Arg Ala Pro Lys Gln Leu Trp Gly Asn Leu Ser Pro
 130 135 140
 Thr Ala Arg Lys Gln Val Val Thr Glu Leu Lys Arg Ser Arg Val Ile

145 150 155 160
 Lys Pro Asn Glu Ser Asn Trp Leu Leu Phe Ala Ser Ile Val Glu Ala
 165 170 175
 Ala Leu Gln Glu Phe Thr Gly Glu Cys Asp Thr Thr Arg Leu Asn Tyr
 180 185 190
 Gly Val Arg Lys Phe Arg Asp Leu Trp Tyr Lys Gly Asp Ala Gln Tyr
 195 200 205
 Gly Asp Gly Ala Glu Phe His Leu Asp Tyr Tyr Asn Ser Phe Val Ile
 210 215 220
 His Pro Met Leu Thr Asp Val Leu Val Val Met Gln Lys His Arg Met
 225 230 235 240
 Pro Glu Ser Glu Phe Leu Asn Val Gln Gln Lys Arg Leu Gly Arg Tyr
 245 250 255
 Ala Glu Gln Leu Glu Arg Phe Ile Ser Pro Glu Gly Thr Tyr Pro Val
 260 265 270
 Ile Gly Arg Ser Ile Val Tyr Arg Thr Gly Val Phe His Ala Leu Gly
 275 280 285
 Gln Ala Ala Leu Leu His Leu Leu Pro Gln Gln Ile Val Pro Ala Gln
 290 295 300
 Val Arg Cys Gly Met Thr Lys Val Ile Glu Asn Gln Phe Arg Ser Ala
 305 310 315 320
 Ala Asn Phe Asp Thr Lys Gly Trp Leu Lys Ile Gly Phe Ser Gly Asn
 325 330 335
 Gln Val Gln Met Ser Glu Ser Tyr Ile Asn Thr Gly Ser Thr Tyr Leu
 340 345 350
 Cys Leu Thr Gly Phe Leu Pro Leu Gly Leu Pro Ala Asp Asp Pro Phe
 355 360 365
 Trp Ser Ala Pro Pro Ala Glu Trp Thr Asn Leu Lys Ala Trp Ser Gly
 370 375 380
 Lys Glu Val Pro Thr Asp His Ser Leu
 385 390

<210> 9947
 <211> 696
 <212> PRT
 <213> B.fragilis

<400> 9947
 Ser Ile His Asn Gln Glu His Met Lys Gln Gln Lys Cys Asn Tyr Phe
 1 5 10 15
 Pro Ser Leu Trp Trp Arg Gly Arg Glu Lys Gly Leu Ser Thr Phe Leu
 20 25 30
 Phe Leu Leu Leu Phe Ser Ile Ser Leu His Ala Gln Arg Gln Asp Ile
 35 40 45
 Leu Leu Asn Asn Asn Trp Asn Phe Arg Phe Ser His Gln Val Gln Gly
 50 55 60
 Asp Thr Arg Arg Val Asp Leu Pro His Thr Trp Asn Ala Gln Asp Ala
 65 70 75 80
 Leu Ala Gly Lys Ile Asp Tyr Lys Arg Gly Ile Gly Asn Tyr Glu Lys
 85 90 95
 Ala Leu Tyr Ile Arg Pro Glu Trp Lys Gly Lys Arg Leu Phe Leu Arg
 100 105 110
 Phe Asp Gly Val Asn Ser Ile Ala Asp Val Phe Ile Asn Arg Lys His
 115 120 125
 Ile Gly Glu His Arg Gly Gly Tyr Gly Ala Phe Ile Phe Glu Ile Thr
 130 135 140
 Asp Leu Val Lys Tyr Gly Glu Lys Asn Ser Val Leu Val Arg Ala Asn
 145 150 155 160
 Asn Gly Glu Gln Leu Asp Ile Met Pro Leu Val Gly Asp Phe Asn Phe

				165						170				175	
Tyr	Gly	Gly	Ile	Tyr	Arg	Asp	Val	His	Leu	Leu	Ile	Thr	Asp	Glu	Thr
			180					185					190		
Cys	Ile	Ser	Pro	Leu	Asp	Tyr	Ala	Ser	Pro	Gly	Val	Tyr	Leu	Val	Gln
		195					200					205			
Glu	Val	Val	Ser	Pro	Gln	Glu	Ala	Lys	Val	Cys	Ala	Lys	Val	Asn	Leu
	210					215					220				
Ser	Asn	Arg	Ala	Ala	Asp	Gly	Thr	Ala	Glu	Leu	Gln	Val	Leu	Val	Thr
225					230					235				240	
Asp	Gly	Thr	Lys	Val	Ile	Cys	Lys	Glu	Ser	Arg	Asn	Val	Ser	Leu	Lys
			245						250					255	
Gln	Gly	Ala	Asp	Ile	Gln	Glu	Gln	Leu	Pro	Leu	Leu	Ile	Gln	Lys	Pro
		260						265					270		
Arg	Leu	Trp	Asn	Gly	Cys	Glu	Asp	Pro	Phe	Met	Tyr	Gln	Val	Ser	Ile
	275						280					285			
Ser	Leu	His	Lys	Asp	Gly	Lys	Gln	Ile	Asp	Ser	Val	Thr	Gln	Pro	Leu
	290					295					300				
Gly	Leu	Arg	Tyr	Tyr	His	Thr	Asp	Pro	Asp	Lys	Gly	Phe	Phe	Leu	Asn
305					310					315				320	
Gly	Lys	His	Leu	Pro	Leu	His	Gly	Val	Cys	Arg	His	Gln	Asp	Arg	Ala
			325						330					335	
Glu	Val	Gly	Asn	Ala	Leu	Arg	Pro	Gln	His	His	Glu	Glu	Asp	Val	Ala
		340						345					350		
Leu	Met	Arg	Glu	Met	Gly	Val	Asn	Ala	Ile	Arg	Leu	Ala	His	Tyr	Pro
	355						360					365			
Gln	Ala	Thr	Tyr	Met	Tyr	Asp	Leu	Met	Asp	Lys	His	Gly	Ile	Val	Thr
	370					375					380				
Trp	Ala	Glu	Ile	Pro	Phe	Val	Gly	Pro	Gly	Gly	Tyr	Ala	Asp	Lys	Gly
385					390					395				400	
Phe	Val	Asp	Gln	Ala	Ser	Phe	Arg	Glu	Asn	Gly	Lys	Gln	Gln	Leu	Ile
			405						410					415	
Glu	Leu	Ile	Arg	Gln	His	Tyr	Asn	His	Pro	Ser	Ile	Cys	Phe	Trp	Gly
		420					425					430			
Leu	Phe	Asn	Glu	Leu	Lys	Glu	Val	Gly	Asp	Asn	Pro	Val	Glu	Tyr	Val
	435					440					445				
Lys	Glu	Leu	Asn	Val	Leu	Ala	Lys	Gln	Glu	Asp	Pro	Thr	Arg	Pro	Thr
	450					455					460				
Thr	Ser	Ala	Ser	Asn	Gln	Asp	Gly	Asn	Leu	Asn	Phe	Ile	Thr	Glu	Asn
465					470					475				480	
Ile	Ala	Trp	Asn	Arg	Tyr	Asp	Gly	Trp	Tyr	Gly	Ser	Thr	Pro	Lys	Thr
			485						490					495	
Leu	Ala	Thr	Phe	Leu	Asp	Arg	Thr	His	Lys	Lys	His	Pro	Glu	Leu	Arg
		500						505					510		
Ile	Gly	Ile	Ser	Glu	Tyr	Gly	Ala	Gly	Ala	Ser	Ile	Tyr	His	Gln	Gln
	515						520					525			
Asp	Ser	Leu	Lys	Gln	Pro	Ser	Ala	Ser	Gly	Trp	Trp	His	Pro	Glu	Asn
	530					535					540				
Trp	Gln	Thr	Tyr	Tyr	His	Met	Glu	Asn	Trp	Lys	Ile	Ile	Ala	Glu	Arg
545					550					555				560	
Pro	Phe	Val	Trp	Gly	Thr	Phe	Val	Trp	Asn	Met	Phe	Asp	Phe	Gly	Ala
			565						570					575	
Ala	His	Arg	Thr	Glu	Gly	Asp	Arg	Pro	Gly	Ile	Asn	Asp	Lys	Gly	Leu
		580						585					590		
Val	Thr	Phe	Asp	Arg	Lys	Val	Arg	Lys	Asp	Ala	Phe	Tyr	Phe	Tyr	Lys
	595						600					605			
Ala	Asn	Trp	Asn	Lys	Gln	Glu	Pro	Met	Ile	Tyr	Leu	Ala	Glu	Lys	Arg
	610					615					620				
Cys	Arg	Leu	Arg	Tyr	Gln	Pro	Glu	Gln	Thr	Phe	Met	Ala	Phe	Thr	Thr
625					630					635				640	

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Ala Pro Glu Ala Glu Leu Phe Val Asn Gly Ile Ser Cys Gly Lys Gln
 645 650 655
 Lys Ala Asp Thr Tyr Ser Thr Val Val Trp Lys Asn Val Lys Leu Thr
 660 665 670
 Ser Gly Gly Glu Tyr His Ser Cys Asp Tyr Ser Pro Ala Glu Thr Thr
 675 680 685
 Tyr Arg Arg Ser Asp Ser Arg Ile
 690 695

<210> 9948

<211> 390

<212> PRT

<213> B.fragilis

<400> 9948

Leu Thr Asn Lys Thr Gln Met Ser Asn Ile Ser Ser Thr Val Phe Ala
 1 5 10 15
 Asp Thr Lys Pro His Tyr His Leu Leu Asp Gly Leu Arg Gly Val Ala
 20 25 30
 Ala Leu Met Val Ile Trp Tyr His Val Phe Glu Gly Tyr Ala Phe Ala
 35 40 45
 Gly Gly Thr Thr Ile Asp Thr Phe Asn His Gly Tyr Leu Ala Val Asp
 50 55 60
 Phe Phe Phe Ile Leu Ser Gly Phe Val Ile Gly Tyr Ala Tyr Asp Asp
 65 70 75 80
 Arg Trp Gly Lys Asn Phe Thr Met Lys Asp Phe Ile Lys Arg Arg Leu
 85 90 95
 Ile Arg Leu His Pro Met Val Ile Met Gly Ala Val Val Gly Ala Ile
 100 105 110
 Thr Phe Tyr Ile Gln Gly Ser Val Gln Trp Asp Gly Thr His Ile Gly
 115 120 125
 Ile Ser Met Val Met Leu Ser Leu Leu Cys Thr Ile Phe Phe Ile Pro
 130 135 140
 Ala Met Pro Gly Val Gly Tyr Glu Val Arg Gly Asn Gly Glu Met Phe
 145 150 155 160
 Pro Leu Asn Gly Pro Cys Trp Ser Leu Phe Phe Glu Tyr Ile Gly Asn
 165 170 175
 Ile Leu Tyr Ala Leu Phe Ile Arg Arg Leu Ser Asn Lys Ala Leu Thr
 180 185 190
 Ile Val Val Val Leu Leu Gly Val Ala Leu Ala Ser Phe Ala Ile Phe
 195 200 205
 Asn Val Ser Gly Tyr Gly Asn Ile Gly Val Gly Trp Thr Leu Asp Gly
 210 215 220
 Val Asn Phe Ile Gly Gly Leu Leu Arg Met Leu Phe Pro Phe Ser Met
 225 230 235 240
 Gly Met Leu Leu Ser Arg Asn Phe Lys Pro Met Lys Leu Arg Gly Ala
 245 250 255
 Phe Trp Ile Cys Thr Leu Val Met Ile Ala Leu Phe Ala Val Pro Tyr
 260 265 270
 Leu Glu Gly Thr Glu Ser Ile Cys Thr Asn Gly Ile Tyr Glu Ala Phe
 275 280 285
 Cys Ile Ile Ile Ala Phe Pro Ile Leu Leu Trp Ile Gly Ala Ser Gly
 290 295 300
 Thr Thr Thr Asp Lys Lys Ser Thr Gln Ile Cys Lys Phe Leu Gly Asp
 305 310 315 320
 Ile Ser Tyr Pro Ile Tyr Val Ile His Tyr Pro Phe Met Tyr Leu Phe
 325 330 335
 Tyr Ala Trp Leu Ile Lys Asn Gln Leu Phe Thr Leu Gly Glu Thr Trp
 340 345 350

Gln Val Ala Leu Cys Val Tyr Ala Trp Asn Ile Leu Phe Ala Tyr Leu
 355 360 365
 Cys Leu Lys Leu Tyr Asp Glu Pro Val Arg Lys Tyr Leu Ala Lys Arg
 370 375 380
 Phe Leu Asn Lys Lys Gln
 385 390

<210> 9949
 <211> 204
 <212> PRT
 <213> B.fragilis

<400> 9949
 Glu Leu Ile Lys Leu Cys Lys Phe Val Asn Arg Ile Met Asn Ser Ser
 1 5 10 15
 Pro Met Lys Asn Ile Ile Asn Lys Ile Arg Gln Leu Tyr Pro Val Ser
 20 25 30
 Asp Glu Ala Leu Gln Ala Leu Gln Ala Asn Met Gln Val Lys Tyr Tyr
 35 40 45
 Pro Lys Asp Thr Tyr Ile Val Gln Ser Gly Ile Thr Asp Arg Leu Val
 50 55 60
 Tyr Phe Ile Glu Glu Gly Val Thr Arg Ser Val Phe His His Asn Gly
 65 70 75 80
 Gln Asp Thr Thr Thr Trp Phe Ser Gln Glu Gly Asp Val Thr Phe Gly
 85 90 95
 Met Asp Ser Leu Tyr Tyr Lys Gln Pro Ser Ile Glu Ser Ile Glu Thr
 100 105 110
 Leu Ser Asp Cys Lys Ile Tyr Val Leu His Ile Asp Glu Leu Asn Ala
 115 120 125
 Leu Tyr Glu Lys Tyr Ile Asp Ile Ala Asn Trp Gly Arg Ile Leu His
 130 135 140
 Gln Asp Val Asn Lys Glu Leu Ser His Met Phe Val Glu Arg Leu Gln
 145 150 155 160
 Leu Ser Pro Lys Glu Arg Tyr Glu Gln Phe Asn Arg Arg Tyr Pro Gly
 165 170 175
 Leu Ile Asn Arg Val Lys Leu Lys Tyr Val Ala Ala Phe Leu Gly Ile
 180 185 190
 Ser Ile Tyr Thr Leu Ser Arg Val Arg Ala Lys Lys
 195 200

<210> 9950
 <211> 606
 <212> PRT
 <213> B.fragilis

<400> 9950
 Leu Thr Thr Lys Asp Met Thr Tyr His His Leu Ser Val Leu Val His
 1 5 10 15
 Arg Gln Ala Glu Lys Tyr Gly Asp Lys Thr Ala Leu Lys Tyr Arg Asp
 20 25 30
 Tyr Glu Lys Ala Gln Trp Ile Pro Ile Ser Trp Asn Glu Phe Ser Gln
 35 40 45
 Thr Val Arg Gln Ala Ala Ser Ala Met Val Glu Leu Gly Val Gln Glu
 50 55 60
 Glu Glu Asn Ile Gly Ile Phe Ser Gln Asn Lys Pro Glu Cys Leu Phe
 65 70 75 80
 Thr Asp Phe Ala Ala Phe Ala Asn Arg Ala Val Thr Ile Pro Leu Tyr
 85 90 95
 Ala Thr Ser Ser Pro Ala Gln Ala Gln Tyr Ile Ile Asn Asp Ala Gln

			100				105				110				
Ile	Arg	Phe	Leu	Phe	Val	Gly	Glu	Gln	Phe	Gln	Tyr	Asp	Ala	Ala	Phe
		115					120				125				
Ser	Val	Phe	Gly	Phe	Cys	Pro	Ser	Leu	Val	Gln	Leu	Ile	Ile	Phe	Asp
		130				135					140				
Pro	Ala	Val	Val	Lys	Asp	Pro	Arg	Asp	Met	Ser	Ser	Ile	Tyr	Tyr	Asp
145					150					155					160
Glu	Phe	Leu	Ala	Lys	Gly	Lys	Asp	Leu	Pro	His	Asn	Glu	Val	Val	Glu
				165					170					175	
Glu	Arg	Thr	Ala	Arg	Ala	Ser	Ala	Glu	Asp	Leu	Ala	Asn	Ile	Leu	Tyr
			180					185				190			
Thr	Ser	Gly	Thr	Thr	Gly	Glu	Pro	Lys	Gly	Val	Met	Leu	His	His	Ser
		195					200					205			
Cys	Tyr	Leu	Glu	Ala	Phe	Arg	Ile	His	Asp	Ile	Arg	Leu	Val	Asp	Met
		210				215					220				
Thr	Asp	Lys	Asp	Val	Ser	Met	Asn	Phe	Leu	Pro	Leu	Thr	His	Val	Phe
225						230				235					240
Glu	Lys	Ala	Trp	Thr	Tyr	Leu	Cys	Val	His	Lys	Gly	Val	Gln	Val	Cys
				245					250					255	
Ile	Asn	Leu	Arg	Pro	Ala	Asp	Ile	Gln	Thr	Thr	Ile	Lys	Glu	Ile	Arg
			260				265						270		
Pro	Thr	Leu	Met	Cys	Ser	Val	Pro	Arg	Phe	Trp	Glu	Lys	Val	Tyr	Ala
		275					280					285			
Gly	Val	Gln	Glu	Lys	Ile	Ala	Glu	Thr	Thr	Gly	Ile	Lys	Lys	Met	Leu
		290				295				300					
Met	Leu	Asp	Ala	Ile	Lys	Val	Gly	Arg	Ile	His	Asn	Leu	Asp	Tyr	Leu
305					310					315					320
Arg	Val	Gly	Lys	Thr	Pro	Pro	Arg	Met	Ile	Gln	Leu	Lys	Tyr	Lys	Phe
				325					330					335	
Tyr	Glu	Lys	Thr	Ile	Tyr	Ala	Leu	Leu	Lys	Lys	Thr	Ile	Gly	Ile	Glu
			340				345					350			
Asn	Gly	Asn	Phe	Phe	Pro	Thr	Ala	Gly	Ala	Ala	Val	Pro	Asp	Glu	Ile
		355					360					365			
Cys	Glu	Phe	Val	His	Ser	Val	Gly	Ile	Asp	Met	Leu	Val	Gly	Tyr	Gly
		370				375				380					
Leu	Thr	Glu	Ser	Thr	Ala	Thr	Val	Ser	Cys	Thr	Ser	Lys	Thr	Gly	Tyr
385					390					395					400
Asp	Ile	Gly	Ser	Val	Gly	Gln	Val	Met	Pro	Glu	Val	Glu	Val	Lys	Ile
				405					410					415	
Gly	Glu	Asp	Asn	Glu	Ile	Leu	Leu	Arg	Gly	Lys	Thr	Ile	Thr	Lys	Gly
			420				425					430			
Tyr	Tyr	Lys	Lys	Ala	Glu	Ala	Thr	Ala	Ala	Ala	Ile	Asp	Glu	Glu	Gly
		435					440				445				
Trp	Phe	His	Thr	Gly	Asp	Ala	Gly	Tyr	Phe	Lys	Asn	Gly	Gln	Leu	Tyr
		450				455					460				
Leu	Thr	Glu	Arg	Ile	Lys	Asp	Leu	Phe	Lys	Thr	Ser	Asn	Gly	Lys	Tyr
465					470					475					480
Ile	Ala	Pro	Gln	Ala	Leu	Glu	Thr	Lys	Leu	Val	Ile	Asp	Arg	Tyr	Ile
				485					490					495	
Asp	Gln	Ile	Ala	Ile	Ile	Ala	Asp	Gln	Arg	Lys	Phe	Val	Ser	Ala	Leu
		500					505						510		
Ile	Val	Pro	Val	Tyr	Gly	Phe	Val	Lys	Gln	Tyr	Ala	Lys	Glu	Lys	Gly
		515					520					525			
Ile	Glu	Tyr	Lys	Asp	Met	Ala	Glu	Leu	Leu	Glu	His	Pro	Lys	Ile	Thr
		530				535					540				
Ala	Leu	Phe	Arg	Ala	Arg	Ile	Asp	Thr	Leu	Gln	Gln	Gln	Phe	Ala	His
545					550					555					560
Tyr	Glu	Gln	Ile	Lys	Arg	Phe	Thr	Leu	Leu	Pro	Glu	Pro	Phe	Ser	Met
				565				570						575	

100 105 110
 115 120 125
 130 135 140
 145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
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 Ala Arg Asn Tyr Lys Glu Val Ile Asp Lys Met Tyr Glu Glu
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 <213> B.fragilis

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 35 40 45
 Pro Gly Thr Ala Gln Ser Phe Leu Ser Asn Tyr Phe Pro Gly Gln Thr
 50 55 60
 Pro Glu Lys Ile Glu Arg Thr Asn Thr Asp Gln Glu Asn Ala Pro Leu
 65 70 75 80
 Leu Tyr Arg Val Val Phe Pro Asn Glu Val Lys Val Glu Phe Ser Glu
 85 90 95
 Asn Gly Gly Trp Lys Arg Leu Met Ile Pro Asp Gln Lys Leu Pro Gly
 100 105 110
 Ser Leu Asp Pro Leu Trp Gly Lys Ile Ile Glu Tyr Val Gln Gln Leu
 115 120 125
 Phe Pro Asp Asp Pro Phe Ile Gly Ile Glu Asn Ala Cys Tyr Gly Asp
 130 135 140
 Cys Val Leu Leu Ser Ser Gly Lys Lys Ile Ala Phe Tyr Tyr Asp Gly
 145 150 155 160
 Thr Cys Ile Gly Tyr Glu Met Asp Ile Lys Asp Glu Ser Gly Val Pro
 165 170 175
 Gln Pro Val Arg Asp Phe Val Ala Thr Tyr Phe Pro Asp Gly Val Phe
 180 185 190
 Gln Val Val Glu His Ile Pro Asn Lys Asn Val Thr Ala Gly Tyr Ser
 195 200 205
 Phe Trp Leu Glu Asn Gly Phe Lys Cys Val Leu Asn Asp Arg Gly Gln
 210 215 220
 Trp Thr Glu Val Asn Gly Gly Thr Glu Leu Leu Pro Val Ser Ile Leu
 225 230 235 240
 Glu Ala Leu Pro Ala Lys Val Thr Glu Gln Leu His Arg Asp Tyr Pro
 245 250 255
 Ala Ala Gln Val Thr Tyr Ile Arg Leu Glu Gly Thr Cys Tyr Thr Ile
 260 265 270
 Gln Val Ser Lys Thr Val Tyr Val Thr Ile Asp Pro Glu Asn Lys Pro
 275 280 285
 Ile Val Val Pro Val Met Gln Ala Gln Ala Leu Ala Glu Glu Tyr Phe
 290 295 300
 Gly Lys Leu Arg Ser Ile Ser Ile Ser His Pro Leu His Thr Asp Val
 305 310 315 320
 Leu Asn Phe Lys Val Cys Leu Pro Asn Gly Phe Asn Met Leu Val Asn
 325 330 335
 Glu Asp Ala Ser Glu Trp Leu Asn Ile Asp Gly Asn Gly Phe Ala Phe
 340 345 350
 Pro Glu Lys Leu Val Ala Ser Leu Pro Glu Lys Ile Thr Glu Tyr Ile
 355 360 365
 Ser Ala His Ser Asn Ser Glu Ile Thr Arg Val Asp Arg Ser Val Ala
 370 375 380

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

Ala Ser Phe Leu Val Glu Leu Thr Asn Gly Asp Gly Leu Met Phe Asp
 385 390 395 400
 Ser Gln Gly Gly Phe Leu Gly Lys Glu Lys Ile Glu Leu Ser Ile Ser
 405 410 415
 Glu Lys Thr Tyr Arg Tyr Met Arg His Gln Phe Pro Asp Asp Leu Asn
 420 425 430
 Met Tyr Phe Ser Ser Tyr Ser Ile Glu Gly Trp Ile Tyr Lys Leu Gly
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 Asp Gly Ser Gln Val Arg Phe Asp Arg Asp Gly Asn Phe Val Glu Met
 450 455 460
 Ile Ala Ala Ala Lys
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<211> 380

<212> PRT

<213> B.fragilis

<400> 9952

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 Asp Lys Ala Ser Ser Gly Ser Met Trp Ser Asn Glu Asn Phe Cys Thr
 35 40 45
 Met Gly Val Ala Ser Ile Tyr Ala Thr Leu Arg Glu Gly Tyr Val Ala
 50 55 60
 Lys Glu Ala Tyr Leu Met Glu Ala Phe Ser Val Gly Ala Thr Cys Arg
 65 70 75 80
 Asp Asn Asp Tyr Pro Leu Leu Ala Gly Thr Ala Ser Ile Gly Ser Gly
 85 90 95
 Ile Phe Ser Asp Tyr Trp Lys Gln His Tyr Ala Gly Ile Tyr Arg Ala
 100 105 110
 Asn Asp Ala Ile Val His Leu Pro Asp Ala Pro Ile Ser Glu Ser Val
 115 120 125
 Lys Gly Lys Leu Leu Ser Glu Ala Lys Val Leu Arg Ala Phe Tyr Tyr
 130 135 140
 Tyr Lys Leu Asn Ala Val Phe Arg Gly Val Pro Tyr Tyr Asn Thr Pro
 145 150 155 160
 Met Glu Leu Asp Gln Ala Asp Lys Pro Arg Glu Ser Glu Glu Asn Ile
 165 170 175
 Trp Asn Phe Cys Ile Gln Asp Leu Thr Asp Ala Ile Asn Asp Pro Asn
 180 185 190
 Phe Pro Asp Arg Ile Ala Ala Gly Lys Ala Glu Trp Gly His Val Thr
 195 200 205
 Lys Ser Val Ala Tyr Ala Leu Arg Gly Lys Ile Tyr Leu Trp Thr Lys
 210 215 220
 Glu Trp Ser Lys Ala Glu Ala Asp Phe Arg Lys Val Gly Glu Leu Gly
 225 230 235 240
 His Ser Leu Phe Gln Asp Gly Tyr Lys Gln Leu Phe Lys Glu Ala Asn
 245 250 255
 Glu Gln Ser Asp Glu Ala Ile Phe Ser Leu Gln Cys Ile Asp Asn Asn
 260 265 270
 Gly Ser Thr Tyr Gly Asn Ser Met Ser Phe Arg Tyr Gly Gly Arg Thr
 275 280 285
 Thr Phe Gly Ser Cys Trp Asn Thr Met Leu Ala Ser Val Asp Phe Val
 290 295 300
 Glu Thr Tyr Glu Asn Ile Asp Gly Ser Lys Phe Asn Trp Asp Glu Tyr
 305 310 315 320

Ile	Pro	Gly	Phe	Ser	Ser	Leu	Asp	Ile	Lys	Asp	Arg	Glu	Val	Phe	Phe
				325					330					335	
Leu	Arg	Asn	Thr	Asp	Pro	Glu	Thr	Val	Lys	Ala	Gln	Tyr	Lys	Arg	Asn
			340					345					350		
Arg	Leu	Cys	Arg	His	Gly	Arg	Gly	Ile	Arg	Arg	His	Gly	Lys	Lys	Asn
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Lys	Ser	Gln	Ser	Arg	Arg	Thr	Ser	Gly	Glu	Val	Glu				
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<211> 433

<212> PRT

<213> B.fragilis

<400> 9953

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Phe	Ile	Leu	Val	Thr	Leu	Phe	Ser	Leu	Leu	Ile	Gly	Leu	Ser	Gln	Arg
		20						25					30		
Lys	Ile	Ser	Leu	Lys	Arg	Glu	Gly	Glu	Thr	Thr	Leu	Phe	Gly	Thr	Asp
		35				40						45			
Arg	Thr	Phe	Thr	Phe	Ile	Gly	Met	Leu	Gly	Tyr	Leu	Leu	Tyr	Ile	Leu
	50				55					60					
Asp	Pro	Glu	Glu	Met	His	Leu	Phe	Met	Gly	Gly	Gly	Leu	Ile	Leu	Gly
65				70					75					80	
Ile	Leu	Leu	Gly	Leu	Asn	Tyr	Tyr	Val	Lys	Gln	Ser	Gln	Phe	His	Val
			85					90						95	
Phe	Gly	Val	Thr	Thr	Ile	Ile	Ile	Ala	Leu	Ile	Thr	Tyr	Cys	Ile	Ala
		100						105					110		
Pro	Ile	Val	Ser	Thr	Gln	Pro	Ser	Trp	Phe	Tyr	Val	Met	Val	Ile	Val
	115					120						125			
Thr	Val	Leu	Leu	Leu	Thr	Glu	Leu	Lys	His	Thr	Phe	Thr	Glu	Ile	Ala
	130				135						140				
Gln	Arg	Met	Lys	Asn	Asp	Glu	Met	Ile	Thr	Leu	Ala	Lys	Phe	Leu	Ala
145				150					155					160	
Ile	Ser	Gly	Ile	Ile	Leu	Pro	Met	Leu	Pro	Asn	Glu	Asn	Ile	Ile	Pro
			165					170						175	
Asp	Ile	Asn	Leu	Thr	Pro	Tyr	Thr	Ile	Trp	Leu	Ala	Thr	Val	Val	Val
		180					185						190		
Ser	Gly	Ile	Ser	Tyr	Leu	Ser	Tyr	Leu	Leu	Lys	Arg	Tyr	Val	Phe	Arg
	195					200						205			
Glu	Ser	Gly	Val	Leu	Val	Ser	Gly	Ile	Ile	Gly	Gly	Leu	Tyr	Ser	Ser
	210					215				220					
Thr	Ala	Thr	Ile	Ser	Val	Leu	Ala	Arg	Lys	Ser	Arg	Asn	Ala	His	Ser
225				230						235				240	
Gln	Glu	Ala	Ser	Glu	Tyr	Val	Ala	Ala	Met	Leu	Leu	Ala	Val	Ser	Met
			245					250						255	
Met	Phe	Leu	Arg	Phe	Met	Ile	Leu	Ile	Leu	Ile	Phe	Ser	Ser	Thr	Ile
		260				265							270		
Phe	Thr	Ser	Ile	Tyr	Pro	Tyr	Leu	Leu	Ile	Met	Ala	Ala	Val	Ala	Ala
	275					280						285			
Val	Val	Ala	Trp	Phe	Ile	His	Thr	Arg	Arg	Lys	Arg	Thr	Pro	Asp	Ala
	290					295					300				
Asp	Leu	Val	Glu	Glu	Glu	Asp	Asp	Ser	Ser	Asn	Pro	Leu	Glu	Phe	Lys
305				310						315				320	
Val	Ala	Leu	Ile	Phe	Ala	Gly	Leu	Phe	Val	Ile	Phe	Thr	Val	Leu	Thr
			325					330						335	
His	Tyr	Thr	Leu	Ile	Tyr	Ala	Gly	Thr	Gly	Gly	Leu	Asn	Leu	Leu	Ser
			340					345					350		

Phe Val Ser Gly Phe Ser Asp Ile Thr Pro Phe Ile Leu Asn Leu Leu
 355 360 365
 Gln Gly Thr Gly Ser Val Ala Ala Thr Val Val Met Ala Cys Thr Met
 370 375 380
 Gln Ala Ile Ile Ser Asn Ile Val Val Asn Met Cys Tyr Ala Leu Phe
 385 390 395 400
 Phe Ser Gly Lys Gln Ser Lys Leu Arg Ser Trp Ile Leu Gly Gly Phe
 405 410 415
 Gly Cys Val Ile Ala Ala Asn Val Val Leu Phe Phe Phe Tyr Leu
 420 425 430
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<210> 9954
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 <212> PRT
 <213> B.fragilis

<400> 9954
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 Asn His Gln Met Pro Phe Pro Arg Leu Asp Ser Ser Ile Met Arg Val
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 Phe Tyr Leu Ser Tyr Val Phe Met Phe Val Ala Leu Leu Ile
 50 55 60

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 Phe Gly Cys Pro Gln Ile Asn Asp Met Asn Glu His Lys His Asn Tyr
 35 40 45
 Asn Met Lys Ile Asn Cys Leu Leu Ala Leu Ala Leu Ser Ala Ser Ser
 50 55 60
 Leu Ala Ala Gln Asp Ala Val Ile Arg Val Asp Ala Gly Lys Val Glu
 65 70 75 80
 Asn Lys Ile Thr Pro Tyr Leu Tyr Gly Ala Cys Met Glu Asp Val Asn
 85 90 95
 His Glu Ile Tyr Gly Gly Leu Tyr Asp Gln Lys Ile Phe Gly Glu Ser
 100 105 110
 Phe Glu Glu Pro Val Ser Met Asp Asn Phe Ile Gly Phe Thr Arg Cys
 115 120 125
 Glu Gly Val Trp Lys Leu Gln Asp Gly Gln Leu Ser Val Gln Ala His
 130 135 140
 Pro Gly Ala Lys Leu Val Tyr Asp Asp Thr Gln Leu Ser Asp Gly Thr
 145 150 155 160
 Val Gly Val Asp Leu Lys Phe Thr Asn Gly Thr Ser Ser Ser Asn Asn
 165 170 175
 Ala Gly Leu Leu Leu Arg Val Gly Glu Tyr Gly Gly Gly Ala Asp Asn
 180 185 190
 Phe Asp Gly Tyr Glu Val Ser Leu Phe Ala Asp Gly Lys Arg Leu Leu

195	200	205
Leu Gly Lys His Leu His Asn Trp Gln Glu Leu Lys Thr Thr Pro Val		
210	215	220
Asp Val Asp Pro Thr Gln Trp Asn Arg Met Glu Val Lys Leu Asp Gly		
225	230	235
Asp Glu Leu Val Ile Leu Leu Asn Asp Cys Glu Val Leu Arg Phe Glu		
	245	250
Asp Arg Asp Thr Gly Leu Arg Asn Gly Lys Val Ala Phe Arg Asn Trp		
	260	265
Gly Ala Asp Val Ser Tyr Arg Ser Leu Thr Ile Gly Ser Asn Thr Pro		
	275	280
Val Lys Leu Leu Thr Lys Ala Thr Pro Gln Val Ser Gly Met Trp Asp		
	290	295
Ala Phe Ala Asp Leu Ala Ala Ala Val Tyr Lys Gln Ile Ala Asp		
305	310	315
Lys Pro Phe His Gly Arg Tyr Ala Gln Glu Ile Glu Tyr Leu Ala Gly		
	325	330
Thr Gly Lys Val Gly Ile Ala Asn Arg Ser Leu Asn Arg Trp Gly Ile		
	340	345
Ser Val Arg Gln Gly Glu Lys Lys Thr Gly Ser Leu Tyr Leu Lys Gly		
	355	360
Lys Ala Glu Val Arg Val Ala Leu Gln Ser Val Asp Gly Glu Lys Glu		
	370	375
Tyr Ala Val Gln Cys Ile Arg Ala Asn Ala Gly Asp Trp Lys Lys Tyr		
385	390	395
Thr Phe Glu Leu Thr Pro Asp Lys Thr Asp Glu Asn Ala Arg Leu Ala		
	405	410
Ile Tyr Leu Glu Glu Lys Gly Arg Ile Gln Val Asp Met Val Thr Leu		
	420	425
Met Asn Gly Ala Asp Arg Gln Phe Cys Gly Leu Pro Leu Arg Asn Asp		
	435	440
Ile Gly Gln Ala Met Val Asp Gln Gly Leu Arg Phe Leu Arg Tyr Gly		
	450	455
Gly Thr Met Val Asn Ala Pro Glu Tyr Arg Phe Lys Lys Met Ile Gly		
465	470	475
Asp Arg Ala Glu Arg Pro Pro Tyr Lys Gly His Trp Tyr Thr Tyr Ser		
	485	490
Thr Asn Gly Phe Gly Ile Glu Asp Phe Leu His Phe Cys Glu Lys Ala		
	500	505
Gly Phe Met Pro Ala Tyr Ala Val Asn Val Glu Glu Ser Ala Gln Asp		
	515	520
Met Glu Asp Met Ile Glu Tyr Leu Asn Gly Ser Val Asp Thr Lys Trp		
	530	535
Gly Lys Lys Arg Ala Glu Asn Gly His Pro Glu Pro Tyr Gly Leu Lys		
545	550	555
Tyr Leu Glu Ile Gly Asn Glu Glu Val Ile Trp Gly Asp Ile Glu Ala		
	565	570
Asp Tyr Gln His Tyr Ile Asp Arg Phe Asn Asp Ile Tyr Glu Ala Val		
	580	585
His Ala Lys Asp Pro Glu Val Gln Phe Ile His Ser Ala Trp Trp Arg		
	595	600
Pro Glu Ser Pro Asn Met Glu Lys Val Phe Lys Ala Leu Asp Gly Lys		
	610	615
Ala Ala Tyr Trp Asp Tyr His Pro Trp Thr Asp Asp Leu Gly Ser His		
625	630	635
Val Asn Ile Asp Arg Glu Leu Thr Asp Met Lys Ala Lys Phe Leu Lys		
	645	650
Trp Asn Pro Lys Thr Ser Met Arg Cys Ala Ile Phe Glu Glu Asn Gly		
	660	665
		670

195 200 205
 210 215 220
 225 230 235
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 565 570 575
 580 585 590
 595 600 605
 610 615 620
 625 630 635
 645 650 655
 660 665 670

Asn Leu His Asn Val Gln Arg Ala Ile Val His Ala Thr Val Gln Asn
 675 680 685
 Val Val Arg Arg His Gly Asp Phe Ile Leu Thr Thr Cys Ala Ala Asn
 690 695 700
 Ala Leu Gln Pro Tyr Leu Gln Asn Asp Asn Gly Trp Asp Gln Gly Gln
 705 710 715 720
 Ile Phe Phe Thr Pro Gly Gln Val Trp Gly Met Pro Thr Phe Tyr Ala
 725 730 735
 Gln Gln Met Ser Ser Ala His His His Pro Leu Arg Leu Trp Ser Glu
 740 745 750
 Thr Val Gly Glu Leu Asp Met Thr Ala Thr Thr Asn Glu Ala Arg Asp
 755 760 765
 Glu Val Ile Leu His Val Val Asn Thr Ser Ser Glu Val Arg Glu Thr
 770 775 780
 Gln Val Ser Leu Ser Gly Phe Ile Pro Lys Gly Asn Met Glu Ile Tyr
 785 790 795 800
 Thr Leu Ser Gly Glu Leu Asn Asp Glu Asn Leu Pro Asp Thr Pro Thr
 805 810 815
 Arg Ile Leu Pro Lys Ala Thr Trp Lys Gln Ala Pro Gly Ser Asp Phe
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 Thr Tyr Ser Phe Pro Gly Tyr Ser Tyr Thr Ile Val Val Leu Lys Lys
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<211> 444

<212> PRT

<213> B.fragilis

<400> 9956

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 20 25 30
 Phe Leu Pro Glu Val Lys Lys Glu Ser Leu Thr Phe Ser Ser Glu Asp
 35 40 45
 Asn Lys Phe Lys Leu Thr Phe Asn Gly Arg Ile Gln Ala Asp Gly Ala
 50 55 60
 Met Phe Phe Gly Glu Asp Tyr Gln Pro Ile Gly Asn Gly Val Gly Phe
 65 70 75 80
 Arg Arg Val Arg Leu Gly Ala Thr Ala Ala Phe Gly Lys Arg Leu Ser
 85 90 95
 Gly Lys Ile Glu Met Asp Leu Thr Asp Gly Gly Phe Ser Leu Lys Asp
 100 105 110
 Cys Phe Ile Lys Tyr Ala Phe Pro Asn Gly Leu Tyr Phe Arg Ala Gly
 115 120 125
 Asn Phe Lys Glu Ser Phe Gly Met Ala Ala Met Thr Ser Ser Gly Asp
 130 135 140
 Leu Trp Phe Met Glu Lys Ala Asn Val Val Ser Ala Phe Ala Pro Glu
 145 150 155 160
 Tyr His Ile Gly Val Gln Gly Thr Trp Glu His Asp Gln Phe Leu Gly
 165 170 175
 Val Ala Gly Val His Phe Lys Lys Ile Glu Gly Asn Lys Glu Lys Asp
 180 185 190
 Tyr Ser Glu Ser Asn Asn Lys Ala Gly Glu Asp Glu Gly Ile Ser Val
 195 200 205
 Thr Ala Arg Ala Val Trp Gln Pro Val Ser Ala Asp Lys Val Lys Gly
 210 215 220
 Phe His Leu Gly Ile Ala Ala Ser Tyr Arg Thr Pro Lys Thr Thr Val
 225 230 235 240

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<211> 1119
<212> PRT
<213> B.fragilis
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			20					25					30		
Trp	Ala	Val	Ser	Ser	Gln	Glu	Thr	Val	Glu	Asn	Gly	Asp	Ala	Ile	Thr
		35					40					45			
Ala	Val	Pro	Gln	Gln	Arg	Arg	Thr	Val	Lys	Gly	Ile	Val	Lys	Asp	Ala

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43	44	45	46	47	48	49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80	81	82	83	84
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99	100	101	102	103	104	105	106	107	108	109	110	111	112
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197	198	199	200	201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220	221	222	223	224
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267	268	269	270	271	272	273	274	275	276	277	278	279	280
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379	380	381	382	383	384	385	386	387	388	389	390	391	392
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421	422	423	424	425	426	42							

Ser	Gln	Leu	Ser	Thr	Ser	Phe	Gly	Tyr	Glu	Ser	Asn	Tyr	Ser	Tyr	Thr
530						535					540				
Leu	Glu	Asn	Leu	Leu	Asn	Tyr	His	His	Thr	Phe	Ala	Gln	Lys	His	Asp
545					550					555					560
Val	Ser	Ala	Leu	Leu	Gly	Tyr	Gln	Glu	Phe	Tyr	Lys	Asn	Tyr	Tyr	Thr
				565					570					575	
Val	Asp	Ala	Ala	Lys	Lys	Gly	Leu	Ile	Asp	Glu	Ser	Leu	Asn	Gln	Phe
			580					585					590		
Asp	Glu	Ala	Thr	Glu	Met	Thr	Ser	Thr	Lys	Gly	Ala	Thr	Gln	Asp	Tyr
		595				600						605			
Ala	Thr	Arg	Ser	Val	Phe	Gly	Arg	Val	Asn	Tyr	Ala	Tyr	Asn	Ser	Arg
610					615						620				
Tyr	Leu	Phe	Glu	Ala	Asn	Phe	Arg	Tyr	Asp	Gly	Ser	Ser	Arg	Phe	His
625					630					635					640
Lys	Asp	His	Arg	Trp	Gly	Phe	Phe	Pro	Ser	Leu	Ser	Gly	Ala	Trp	Arg
				645					650					655	
Ile	Ser	Glu	Glu	Ser	Phe	Met	Glu	Asn	Thr	Arg	Thr	Trp	Leu	Asp	Asn
			660						665				670		
Leu	Lys	Val	Arg	Ala	Ser	Trp	Gly	Lys	Leu	Gly	Asn	Ser	Glu	Ile	Gly
		675					680					685			
Asn	Tyr	Glu	Tyr	Met	Ser	Val	Tyr	Ser	Thr	Thr	Asn	Ala	Val	Phe	Gly
690					695						700				
Asn	Ala	Leu	Asn	Ser	Ala	Leu	Tyr	Met	Gly	Ala	Ile	Ala	Asn	Ser	Leu
705					710					715					720
Leu	Lys	Trp	Glu	Ser	Thr	Thr	Ser	Val	Asn	Phe	Gly	Ile	Asp	Val	Asn
				725					730					735	
Leu	Leu	Lys	Asn	Arg	Leu	Ser	Ile	Ser	Ala	Asp	Leu	Tyr	Gln	Lys	Lys
			740					745					750		
Thr	Asp	Gly	Ile	Leu	Tyr	Arg	Pro	Thr	Ile	Pro	Tyr	Val	Phe	Gly	Thr
		755					760					765			
Met	Thr	Ala	Pro	Arg	Gln	Asn	Leu	Ala	Lys	Val	Ser	Asn	Lys	Gly	Val
		770				775					780				
Glu	Leu	Ser	Leu	Gly	Trp	Arg	Asp	Asn	Ile	Gly	Gly	Val	Ser	Tyr	Ser
785				790						795					800
Ile	Asn	Gly	Asn	Phe	Ser	Tyr	Asn	Lys	Ser	Asn	Ile	Asp	Ala	Tyr	Asn
				805					810					815	
Gly	Thr	Tyr	Glu	Arg	Thr	Trp	Val	Glu	Asp	Pro	Asn	Asn	Lys	Leu	Thr
			820					825					830		
Gly	Gly	Lys	Trp	Glu	Asp	Asn	Ile	Gly	Lys	Val	Ser	Ser	Gly	Gly	Thr
		835					840					845			
Thr	Pro	Ile	Val	Glu	Gly	Arg	Met	Met	Asn	Glu	Tyr	Tyr	Leu	Arg	Asn
					855						860				
Val	Tyr	His	Gly	Asn	Gly	Ser	Tyr	Tyr	Asn	Ala	Asp	Gly	Ser	Val	Asn
865				870						875					880
Pro	Gln	Gly	Gly	Pro	Lys	Thr	Gly	Met	Ile	Arg	Thr	Glu	Lys	Asp	Met
				885					890					895	
Ala	Trp	Val	Lys	Asp	Met	Ile	Ala	Ala	Gly	Tyr	Glu	Phe	Gln	Pro	Gly
			900					905				910			
Lys	Thr	Val	Ala	Lys	Asn	Lys	Ile	Trp	Tyr	Gly	Asp	Tyr	Ile	Tyr	Ala
		915					920					925			
Asp	Ser	Asn	Asn	Asn	Gly	Val	Tyr	Gly	Asp	Asp	Asn	Asp	Tyr	Thr	Phe
930					935						940				
Gln	Lys	Thr	Ser	Asn	Lys	Pro	Lys	Tyr	Asn	Phe	Gly	Phe	Gln	Ala	Ser
945				950						955					960
Ala	Ala	Trp	Lys	Gly	Phe	Asp	Leu	Ser	Met	Val	Trp	Ala	Gly	Ala	Ala
			965						970					975	
Gly	Phe	Ser	Ile	Tyr	Trp	Gly	Ala	Thr	Thr	Gly	Tyr	Asn	Ala	Ala	Ser
			980					985					990		
Thr	Glu	Trp	Gly	Ser	Thr	Ile	Ala	Gln	Arg	Val	Ala	Glu	Asn	His	Tyr

995	1000	1005
Phe Tyr Asn Pro Glu Asn Pro Asp Asp Pro Arg Thr Asn Ile Asn Ala		
1010	1015	1020
Lys Tyr Pro Arg Met Ala Tyr Ile Asp Gly Tyr Val Gln Asn Arg His		
1025	1030	1035
Gly Asn Thr Thr Leu Trp Leu Tyr Lys Gly Asp Tyr Ile Lys Leu Lys		
	1045	1050
Asn Leu Ser Leu Gly Tyr Thr Leu Pro Lys Asn Trp Val Ser Lys Ile		
	1060	1065
Ala Met Gln Asn Ala Arg Ile Tyr Val Ser Ala Glu Asn Leu Leu Thr		
	1075	1080
Ile Thr Gly Phe Glu Gly Gln Asp Pro Glu Ser Ala Thr Gly Met Gly		
	1090	1095
Tyr Ser Pro Phe Arg Thr Ile Ala Ile Gly Ala Asn Ile Thr Phe		
1105	1110	1115

<210> 9959

<211> 860

<212> PRT

<213> B.fragilis

<400> 9959

Leu His Met Arg Asn Lys Leu Leu Leu Leu Leu Leu Met Phe Met	
1	5
Thr Ser Gly Met Met Tyr Ala Gln Gln Lys Thr Gln Gln Ser Gln	10
	20
Gln Arg Thr Ala Ala Pro Ser Tyr Thr Leu Lys Gly Val Leu Leu Asp	25
	35
Ser Leu Thr Gln Glu Gly Glu Pro Tyr Ala Thr Ile Lys Ile Ala Lys	40
	50
Lys Asn Ala Pro Gln Lys Ala Leu Lys Met Ala Val Thr Asp Leu Asn	55
	65
Gly Lys Phe Gln Glu Lys Leu Thr Val Ala Pro Gly Glu Tyr Ile Ile	60
	70
Thr Leu Ser Ser Val Gly Lys Val Thr Ile Val Lys Asp Phe Thr Val	75
	85
Lys Ala Ser Glu Lys Val Ile Asp Leu Gly Lys Leu Asn Met Ala Glu	90
	100
Ala Thr Asn Glu Leu Lys Gly Ile Glu Val Val Ala Gln Lys Pro Leu	105
	115
Val Lys Val Asp Val Asp Lys Ile Glu Tyr Asn Ile Glu Asp Asp Pro	120
	130
Asp Ser Lys Thr Asn Thr Val Met Glu Met Leu Arg Lys Val Pro Leu	135
	145
Val Thr Val Asp Gly Glu Asp Asn Ile Lys Val Asn Gly Ser Ser Ser	140
	150
Phe Lys Ile His Val Asn Gly Lys Pro Asn Asn Met Met Ser Asn Asn	155
	165
Pro Lys Asp Val Leu Lys Ser Met Pro Ala Asn Thr Ile Lys His Ile	170
	180
Glu Val Ile Thr Ser Pro Gly Ala Lys Tyr Asp Ala Glu Gly Val Gly	185
	195
Gly Ile Leu Asn Ile Val Thr Val Gly Gly Phe Glu Gly Tyr Thr	200
	210
Ala Thr Phe Arg Ala Ser Gly Ser Asn Arg Gly Ala Gly Ala Gly Gly	215
	225
Tyr Ala Thr Ile Lys Ser Gly Lys Leu Thr Ile Thr Gly Asn Tyr Asn	230
	245
Tyr Asn Tyr Asp Thr Ser Pro Lys Ser Tyr Ser Asp Ser Tyr Arg Glu	250
	260
	275
	280
	285

[illegible]

[illegible]

<400> 9960

Val 1	Ala	Phe	Met	Lys 5	Ile	Gly	Tyr	Leu	Lys 10	Pro	Gly	Ile	Leu	Leu 15	
Val	Leu	Leu	Phe 20	Ser	Phe	Arg	Gln	Asp 25	Leu	Phe	Ala	Lys	Lys 30	Arg	Ile
Thr	Ser	Leu	Lys 35	Cys	Glu	Tyr	Ile 40	Glu	Ala	Pro	Leu	Gly 45	Leu	Asp	Val
Gln	Arg	Pro	Arg	Leu	Met	Trp 55	Lys	Val	Asp	Thr	Ser	Asp	Val	Pro	Ser
Arg 65	Gln	Thr	Ala	Tyr 70	Arg	Ile	Leu	Val	Ser 75	Ser	Thr	Pro	Glu	Leu	Leu 80
Arg	Gln	Gly	Glu	Ala 85	Asp	Ile	Trp	Asp 90	Ser	Gly	Lys	Gln	Lys 95	Ser	Asp
Glu	Gln	Leu	Val 100	Ser	Tyr	Ala	Gly 105	Ser	Thr	Leu	Arg	Pro	His 110	Thr	Arg
Tyr	Trp	Trp	Arg	Val	Glu	Val	Trp 120	Leu	Asn	Asn	Lys	Lys 125	Val	Val	Ser
Glu	Pro	Val	Trp	Phe	Glu	Thr	Gly 135	Lys	Phe	Ser	Ala	Thr	Asp	Trp	Glu
Ala 145	Ser	Trp	Ile	Thr 150	Asp	Gly	Tyr	Asp	Lys 155	Asp	Tyr	Glu	Pro	Ser	Pro 160
Met	Phe	Arg	Lys	Val 165	Phe	Asp	Val	Ser 170	Lys	Glu	Val	Ala	Ser	Ala	Arg
Cys	Tyr	Ile	Ser 180	Gly	Leu	Gly	Tyr	Tyr 185	Arg	Leu	Ser	Phe	Asn 190	Gly	Lys
Ala	Val	Asn	Asp 195	His	Ala	Leu	Asp 200	Pro	Gly	Phe	Thr	Asp 205	Tyr	Ser	Lys
Arg	Val	Leu	Tyr	Leu	Thr	Tyr	Asp 215	Ile	Ser	Gly	Leu	Leu 220	Arg	His	Gly
Lys 225	Asn	Cys	Ile	Gly 230	Val	Gln	Leu	Gly	Asn 235	Gly	Trp	Phe	Asn	Glu	Gln 240
Thr	Pro	Ala	Val	Trp 245	Tyr	Phe	His	Glu	Ala 250	Pro	Trp	Arg	Lys 255	Arg	Pro
Gln	Met	Ile	Ala 260	Glu	Ile	His	Leu	Cys 265	Tyr	Thr	Asp	Gly	Ser 270	Lys	Asp
Ile	Ile	Thr	Thr 275	Asp	Thr	Ser	Trp 280	Lys	Thr	Ser	Thr	Gly 285	Pro	Leu	Leu
Phe	Asp	Asn	Leu	Tyr	Val	Gly 295	Ser	Phe	Tyr	Asp	Ala 300	Arg	Leu	Glu	Gln
Lys 305	Gly	Trp	Asp	Thr 310	Glu	Leu	Phe	Asp	Asp 315	Val	Ser	Trp	Gln	His	Ala 320

Lys Leu Thr Ala Ala Pro Ala Pro Leu Ile Glu Ala Gln Lys Met Pro
 325 330 335
 Ser Ile Thr Thr Ala Asp Thr Leu Ser Val Val Ser Val Asn Cys Ile
 340 345 350
 Ser Asp Thr Cys Tyr Val Phe Asp Met Gly Ile Asn Thr Ala Gly Val
 355 360 365
 Pro Arg Leu Glu Ile Lys Gly Glu Arg Gly Thr Arg Ile Arg Leu Arg
 370 375 380
 His Ser Glu Met Leu Gln Lys Asp Gly Asn Ile Asp Gln Arg Asn Ile
 385 390 395 400
 Asp Met His Leu Arg Pro Arg Asn Lys Arg Glu Ile Ile Gln Thr Asp
 405 410 415
 Glu Tyr Val Leu Lys Gly Glu Gly Val Glu Thr Phe Ile Pro Pro Phe
 420 425 430
 Thr Tyr His Gly Phe Arg Tyr Ile Glu Leu Thr Ser Asp Arg Pro Leu
 435 440 445
 Thr Val Ala Asp Val Lys Leu Gln Thr Leu Arg Met His Ser Asp Val
 450 455 460
 Ala Glu Val Gly Ser Phe Lys Cys Ser Asp Gln Leu Leu Asn Thr Ile
 465 470 475 480
 Phe Asn Ile Cys Arg Asn Ser Tyr Leu Ser Asn Leu Phe Gly Ile Pro
 485 490 495
 Thr Asp Cys Pro Thr Arg Glu Lys Asn Gly Trp Met Ala Asp Gly Phe
 500 505 510
 Met Val Gln Glu Ala Gly Met Phe Asn Tyr Asp Ser Arg Asn Val Tyr
 515 520 525
 Ala Lys Trp Val Lys Asp Met Ile Asp Thr Gln Glu Ala Asn Gly Asn
 530 535 540
 Val Ala Gly Ile Ala Pro Thr Ser Arg Arg Trp Asp Ser Asn Trp Ala
 545 550 555 560
 Gly Pro Leu Trp Asp Ala Ala Ile Phe Ile Val Pro Ser Tyr Leu Tyr
 565 570 575
 Arg Tyr Thr Gly Asp Ile Glu Thr Met Arg Gln Val Tyr Pro Ala Ala
 580 585 590
 Glu Arg Tyr Leu Lys Tyr Ile Glu Thr Thr Glu Asp Glu Arg Gly Leu
 595 600 605
 Ile Asn His Gly Leu Gly Asp Trp Leu Phe Tyr Lys Ala Glu Thr Pro
 610 615 620
 Val Asp Phe Met Ala Thr Gly Phe Val Tyr Trp Asp Asn Leu Met Met
 625 630 635 640
 Ala Gln Met Ala Glu Leu Thr Gly Arg Val Glu Asp Arg Gln Lys Tyr
 645 650 655
 Leu Ala Lys Ala Glu Glu Leu Lys Lys Arg Ile Asn Asp His Phe Phe
 660 665 670
 Asp Pro Gln Thr Val Ser Tyr Ala Asn Lys Thr Gln Leu Ser Tyr Ala
 675 680 685
 Leu Pro Leu Tyr Leu His Ile Val Pro Glu Ala Tyr Arg Glu Arg Leu
 690 695 700
 Ala Glu Asn Leu His Lys Ile Ile Ala Ala Asn Asp Tyr Ser Leu Asp
 705 710 715 720
 Phe Gly Phe Ile Gly Ser Val Met Val Pro Asp Val Leu Ala Glu Thr
 725 730 735
 Gly Tyr Ala Glu Thr Ala Tyr Arg Met Leu Thr Lys Thr Ile Leu Pro
 740 745 750
 Ser Trp Gly Tyr Trp Ile Lys Glu Thr Gly Ala Thr Ser Leu Tyr Glu
 755 760 765
 Thr Trp Asp Val Thr Arg Arg Ile Gly Asp Ala Ser Leu Asn His Pro
 770 775 780
 Ser Met Gly Ala Val Ser Ala Trp Met Tyr Lys Tyr Pro Ala Gly Ile

785		790		795		800									
Arg	Leu	Ser	Pro	Asp	Ala	Pro	Ala	Phe	Lys	Lys	Ile	Leu	Ile	Gln	Pro
				805					810					815	
Cys	Phe	Leu	Ser	Asp	Leu	Asp	Phe	Val	Glu	Ala	Ser	His	Glu	Ser	Met
			820					825					830		
Tyr	Gly	Thr	Ile	Arg	Val	Asp	Trp	Arg	Arg	Glu	Glu	Gly	Lys	Ile	Arg
		835					840					845			
Leu	His	Leu	Val	Leu	Pro	Ser	Thr	Ala	Met	Ala	Thr	Val	Val	Leu	Pro
	850					855					860				
Gly	Gln	Lys	Pro	Lys	Ala	Val	Lys	Gly	Gly	Glu	His	Ile	Phe	Val	Ile
865					870					875					880
Pro	Glu														

<210> 9961
 <211> 272
 <212> PRT
 <213> B.fragilis

<400> 9961															
Lys	His	Ser	Ile	Ser	Glu	Ile	Gly	Phe	Ala	Gly	Thr	Glu	Glu	Ala	Leu
1				5					10					15	
Asp	Asp	Met	Val	Lys	Lys	Ile	Lys	Ala	Lys	Val	Asp	Gly	Arg	Leu	Glu
			20					25					30		
Lys	Leu	Ser	Asp	Lys	Ala	Lys	Ala	Leu	Tyr	Leu	Pro	Ala	Gly	Asn	Glu
	35					40						45			
Ala	Arg	Ile	Lys	Ala	Ala	Tyr	Asp	Ser	Arg	Asp	Pro	Arg	Leu	Ser	Gln
	50					55					60				
Thr	Val	Ile	Thr	Pro	Tyr	Ala	Thr	Tyr	Asp	Gly	Ser	Gly	Asn	Ser	Val
65					70					75				80	
Asp	His	Thr	Phe	Thr	Ser	Arg	Trp	Pro	Tyr	Tyr	Gly	Ala	Asp	Thr	Asp
				85					90					95	
Tyr	Pro	Tyr	Asp	Leu	Arg	Thr	Asp	Thr	Gln	Ser	His	Leu	Tyr	Tyr	Leu
			100					105					110		
Phe	Arg	Lys	Phe	Val	Ala	Glu	Gly	Ser	Ser	Glu	Met	Thr	Asn	Arg	Glu
		115					120					125			
Gln	Ser	Pro	Ile	Asp	Leu	Pro	Ile	Ile	Arg	Tyr	Ala	Thr	Val	Val	Ile
	130					135					140				
Gly	Leu	Ala	Glu	Ala	Leu	Asn	Glu	Gln	Gly	Lys	Thr	Asp	Glu	Ala	Ile
145					150					155				160	
Glu	Trp	Leu	Asn	Lys	Val	Arg	Gln	Arg	Ala	Gly	Val	Ala	Leu	Leu	Asn
			165						170					175	
Ser	Asn	Thr	Ala	Thr	Met	Val	Gln	Gly	Gln	Glu	Asp	Met	Arg	Val	Arg
			180						185					190	
Ile	Gln	Asn	Glu	Phe	Arg	Trp	Glu	Thr	Ala	Gly	Glu	Gly	Val	Asp	Phe
		195							200				205		
Tyr	Glu	Glu	Leu	Arg	Trp	Lys	Thr	Trp	Lys	Glu	Ser	Lys	Phe	Asn	Asn
	210					215					220				
Ala	Asp	Gly	Thr	Ala	Gly	Met	Lys	Asp	Val	Trp	Gly	Thr	Ile	Thr	Tyr
225					230					235				240	
Pro	Tyr	Thr	Trp	Gly	Gly	Asp	Gln	Tyr	Tyr	Val	Trp	Pro	Ile	Pro	Lys
			245						250					255	
His	Glu	Thr	Asp	Met	Asn	Lys	Ser	Leu	Thr	Gln	Asn	Ser	Gly	Trp	Asn
			260						265					270	

<210> 9962
 <211> 354
 <212> PRT
 <213> B.fragilis

<400> 9962

Gly Gly Ile Phe Asp Ile Asp Gly Lys Lys Ile Gln Val Glu Glu Glu
 1 5 10 15
 Gln Leu Arg Thr Gln Ala Pro Gly Phe Trp Asp Asp Gln Lys Lys Ala
 20 25 30
 Glu Ala Gln Met Lys Leu Val Lys Gly Leu Gln Lys Trp Ile Glu Gly
 35 40 45
 Tyr Asn Asp Val Lys Thr Leu Thr Asp Glu Leu Glu Leu Ala Phe Asp
 50 55 60
 Phe Tyr Lys Asp Glu Leu Val Thr Glu Gln Glu Val Asp Glu Ala Tyr
 65 70 75 80
 Ala Lys Ala Leu Glu His Val Glu Asn Leu Glu Leu Gln Asn Met Leu
 85 90 95
 Arg Asp Glu Ala Asp Gln Met Ser Cys Val Leu Lys Ile Asn Ser Gly
 100 105 110
 Ala Gly Gly Thr Glu Ser Gln Asp Trp Ala Ser Met Leu Met Arg Met
 115 120 125
 Tyr Leu Arg Tyr Ala Glu Thr Asn Gly Tyr Lys Ala Thr Met Ala Asn
 130 135 140
 Leu Gln Glu Gly Asp Glu Ala Gly Ile Lys Thr Cys Thr Ile Gln Ile
 145 150 155 160
 Glu Gly Asp Tyr Ala Tyr Gly Tyr Leu Lys Gly Glu Asn Gly Val His
 165 170 175
 Arg Leu Val Arg Val Ser Pro Tyr Asn Ala Gln Gly Lys Arg Met Thr
 180 185 190
 Ser Phe Ala Ser Val Phe Val Thr Pro Leu Val Asp Asp Ser Ile Glu
 195 200 205
 Val Asn Ile Leu Pro Ala Cys Ile Ser Trp Asp Thr Phe Arg Ser Gly
 210 215 220
 Gly Ala Gly Gly Gln Asn Val Asn Lys Val Glu Ser Gly Val Arg Leu
 225 230 235 240
 Arg Tyr Gln Tyr Lys Asp Pro Tyr Thr Gly Glu Glu Glu Glu Ile Leu
 245 250 255
 Ile Glu Asn Thr Glu Thr Arg Asp Gln Pro Lys Asn Arg Glu Asn Ala
 260 265 270
 Met Arg Gln Leu Arg Ser Ile Leu Tyr Asp Lys Glu Leu Gln His Arg
 275 280 285
 Met Ala Glu Gln Ala Lys Val Glu Ala Gly Lys Lys Lys Ile Glu Trp
 290 295 300
 Gly Ser Gln Ile Arg Ser Tyr Val Phe Asp Asp Arg Arg Val Lys Asp
 305 310 315 320
 His Arg Thr Asn Phe Gln Thr Ser Asp Val Asn Gly Val Met Asp Gly
 325 330 335
 Lys Ile Glu Gly Phe Ile Lys Ala Tyr Leu Met Glu Phe Ser Ser Glu
 340 345 350
 Glu Ala

<210> 9963

<211> 306

<212> PRT

<213> B.fragilis

<400> 9963

Lys Ser Ile Met Lys Thr Gln Val Phe Lys Leu Ala Cys Leu Ile Ile
 1 5 10 15
 Cys Leu Leu Thr Ile Val Pro Asn Cys His Ala Gly Ser Lys Trp Lys
 20 25 30

Ala Lys His Val Val Leu Ile Gly Leu Asp Gly Trp Gly Ser Tyr Ser
 35 40 45
 Val Glu Lys Ala Asn Ile Pro His Ile Lys Gln Leu Met Asn Asp Gly
 50 55 60
 Ser Tyr Thr Leu Thr Lys Arg Ser Val Leu Pro Ser Ser Ser Ala Val
 65 70 75 80
 Asn Trp Ala Ser Met Phe Met Gly Ala Gly Pro Glu Leu His Gly Tyr
 85 90 95
 Thr Thr Trp Asn Ser Ser Thr Pro Asp Leu Pro Ser Lys Glu Leu Ser
 100 105 110
 Lys Asp Gly Ile Phe Pro Thr Ile Phe Gln Leu Leu Arg Glu Ala Asp
 115 120 125
 Pro Lys Ala Glu Ile Gly Thr Phe Tyr Glu Trp Val Gly Ile Lys Tyr
 130 135 140
 Leu Val Asp Thr Leu Ala Val Asn Lys Tyr Asn Gln Gly Ile Asn Tyr
 145 150 155 160
 Glu Lys His Pro Thr Glu Leu Cys Glu Thr Ala Val Lys Tyr Ile Lys
 165 170 175
 Glu Lys Lys Pro Ala Leu Thr Leu Ile Ala Trp Asp Asn Pro Asp His
 180 185 190
 Val Gly His Lys Glu Gly His Asp Thr Pro Ala Tyr Tyr His Lys Leu
 195 200 205
 Glu Glu Ile Asp Gly Tyr Ile Gly Lys Val Met Asn Ala Val Lys Glu
 210 215 220
 Ala Gly Ile Leu Asp Glu Thr Ile Phe Ile Ile Thr Ser Asp His Gly
 225 230 235 240
 Gly Ile Asn Lys Gly His Gly Gly Lys Thr Met Gln Glu Met Glu Thr
 245 250 255
 Pro Phe Ile Ile Ser Gly Lys Asn Ile Lys Lys Gly His Glu Ile Gln
 260 265 270
 Ala Ser Met Met Gln Phe Asp Val Ala Ala Thr Val Ala Ala Ile Phe
 275 280 285
 Lys Leu Lys Gln Pro Gln Val Trp Ile Gly Arg Pro Ile Met Glu Val
 290 295 300
 Phe Lys
 305

<210> 9964

<211> 135

<212> PRT

<213> B.fragilis

<400> 9964

Ser Cys Leu Met Val Asn Gln Asp Ala Lys Ala Ala Cys Met Gly Leu
 1 5 10 15
 Leu Asn Leu Asn Ser Leu Cys Phe Tyr Asp Leu Lys Gly Asn Leu Met
 20 25 30
 Lys Glu Ile Val Ile Gly Lys Glu Leu Lys Phe Pro Glu Tyr Asp Pro
 35 40 45
 Glu Phe Leu Asp Phe Pro Asn Ala Leu Lys Tyr Phe Ile Ser Leu Cys
 50 55 60
 Gly Thr Pro Asn Tyr Leu Tyr Ala Leu Tyr Asn Gly Phe Pro Gly Thr
 65 70 75 80
 Ser Gly Glu Ser Lys Ile Met Val Phe Thr Trp Gln Gly Ala Pro Asp
 85 90 95
 Ala Ile Tyr Gln Thr Asp Val Lys Leu Glu Arg Ile Ala Asp Ala Pro
 100 105 110
 Ser Gly Arg Tyr Val Leu Gly Leu Asn Ile Thr Glu Glu Val Gly Ser
 115 120 125

Asp Val Leu Lys Phe Glu Leu
130 135

<210> 9965

<211> 514

<212> PRT

<213> B.fragilis

<400> 9965

Arg	His	Arg	Met	Lys	Arg	Thr	Asn	Arg	Thr	Leu	Phe	Ile	His	Asn	Thr
1				5					10					15	
Ala	Arg	Gly	Arg	Ile	Lys	Phe	Leu	Leu	Leu	Ala	Leu	Phe	Ala	Phe	Gln
			20					25					30		
Gly	Leu	Gln	Ala	Gln	Lys	Leu	Phe	Pro	Ala	Pro	Ser	Ala	Ile	Glu	Thr
		35					40					45			
His	Lys	Gly	Thr	Phe	Ser	Tyr	Asp	Glu	Val	Ser	Ala	Lys	Cys	Val	Arg
	50					55					60				
Thr	Thr	Ile	Ser	Lys	Ser	Leu	Pro	Ala	Ile	Gly	Ile	Glu	Tyr	Ser	Asp
65				70						75				80	
Glu	Ala	Tyr	Gln	Leu	Glu	Ile	Thr	Pro	Asp	Ser	Ile	Phe	Ile	Asp	Ala
				85					90					95	
Thr	Ser	Ala	Lys	Gly	Ala	Phe	Tyr	Ala	Arg	Gln	Ala	Ile	Lys	Gln	Leu
			100					105						110	
Ala	Arg	His	Glu	Arg	Gly	Lys	Ile	Arg	Cys	Cys	Arg	Ile	Tyr	Ser	Ser
		115					120					125			
Pro	Arg	Tyr	Ala	Trp	Arg	Gly	Phe	Met	Leu	Asp	Glu	Ser	Arg	His	Phe
		130				135					140				
Phe	Gly	Lys	Glu	Lys	Val	Lys	Gln	Tyr	Leu	Asp	Leu	Met	Ala	Leu	Leu
145				150						155				160	
His	Leu	Asn	Val	Phe	His	Trp	His	Leu	Thr	Asp	Glu	Pro	Gly	Trp	Arg
				165					170					175	
Ile	Glu	Ile	Lys	Lys	Tyr	Pro	Lys	Leu	Thr	Lys	Ile	Gly	Ala	Val	Gly
			180					185					190		
Asn	Trp	His	Asp	Ala	Gln	Ala	Thr	Pro	Gln	Phe	Tyr	Thr	Gln	Asp	Asp
		195					200					205			
Ile	Arg	Glu	Ile	Val	Ala	Tyr	Ala	Ala	Glu	Arg	Gln	Ile	Met	Val	Val
	210					215					220				
Pro	Glu	Phe	Asp	Met	Pro	Gly	His	Ala	Thr	Ala	Val	Cys	Arg	Ala	Tyr
225				230						235				240	
Pro	Glu	Val	Ser	Gly	Gly	Glu	Gly	Arg	Trp	Lys	His	Phe	Thr	Phe	
				245				250					255		
His	Pro	Cys	Lys	Glu	Glu	Thr	Tyr	Arg	Phe	Ile	Ser	Asp	Val	Leu	Asp
			260					265					270		
Glu	Ile	Val	Ala	Leu	Phe	Pro	Ala	Pro	Tyr	Ile	His	Ile	Gly	Gly	Asp
		275					280					285			
Glu	Val	His	Tyr	Gly	Asn	Gln	Asn	Trp	Phe	Thr	Asp	Pro	Glu	Ile	Gln
	290					295					300				
Asn	Phe	Ile	Lys	Glu	Lys	Gly	Leu	Ile	Asn	Glu	Thr	Gly	Leu	Glu	His
305					310					315				320	
Tyr	Phe	Ile	Arg	Arg	Ala	Ala	Asp	Leu	Val	Ala	Ala	Lys	Gly	Lys	Lys
				325					330					335	
Met	Ile	Gly	Trp	Asp	Glu	Ile	Val	Asp	Ala	Gly	Ile	Ser	Pro	Ser	Lys
			340					345					350		
Ala	Leu	Val	Met	Trp	Trp	Arg	His	Asp	Arg	Lys	Tyr	Gln	Leu	Leu	Lys
		355					360					365			
Ala	Leu	Glu	Gln	Gly	Tyr	Gln	Val	Val	Leu	Thr	Pro	Arg	Arg	Pro	Leu
	370					375					380				
Tyr	Gly	Asp	Phe	Val	Gln	Asp	Ala	Ser	His	Lys	Val	Gly	Arg	Tyr	Trp
385					390					395					400

Asp Gly Phe Asn Pro Leu Gln Asp Ile Tyr Ala Leu Pro Glu Pro Ile
 405 410 415
 Ser His Leu Phe Lys Gly Tyr Glu Asp Gln Ile Leu Gly Met Gln Phe
 420 425 430
 Thr Leu Trp Thr Glu Arg Ile Ala Asp Gly Lys Arg Leu Asp Phe Met
 435 440 445
 Thr Phe Pro Arg Leu Ile Ala Leu Ala Glu Ser Ala Trp Thr Ser Ser
 450 455 460
 Lys Glu Lys Asp Trp Ser Arg Phe Cys Met Arg Leu Pro Ser Phe Leu
 465 470 475 480
 Glu Tyr Leu Lys Glu Gln Gly Ile Tyr Tyr Phe Asp Val Ile His Pro
 485 490 495
 Gln Glu Thr Pro Glu Pro Gly Gly Pro Glu Lys Ala Asp Val Leu Gln
 500 505 510
 Asn Gly

<210> 9966

<211> 404

<212> PRT

<213> B.fragilis

<400> 9966

Asn Met Asn Leu Lys Pro Leu Leu Gly Ala Ala Cys Ala Met Ile Cys
 1 5 10 15
 Val Ala Cys Ser Asn His Lys Pro Thr Val Pro Ser Phe Ile Thr Glu
 20 25 30
 Asn Val Glu Phe Ala Lys Ala Gln Leu Gly Leu Ala Ile Asp Thr Ile
 35 40 45
 Glu Ala Ser Gly Lys Cys Leu Asn Pro Val Thr Leu Asn Arg Asp Gly
 50 55 60
 Ser Val Tyr Tyr Cys Gly Tyr Ala Asp Trp Arg Ser Gly Phe Phe Pro
 65 70 75 80
 Gly Ser Ile Trp Tyr Leu Tyr Glu Leu Thr Gly Asp Thr Ser Tyr Leu
 85 90 95
 Pro Leu Ala Arg Lys Tyr Thr Glu Ala Ile Arg Pro Ala Glu His Leu
 100 105 110
 Thr Trp His His Asp Ile Gly Phe Ile Ile Asn Cys Ser Phe Gly Asn
 115 120 125
 Gly Leu Arg Leu Ala Pro Asp Thr Ala Ser Tyr Lys Asp Val Met Val
 130 135 140
 Gln Ala Ala Lys Ser Leu Cys Thr Arg Phe Arg Pro Asn Ala Gly Val
 145 150 155 160
 Ile Gln Ser Trp Asp Val Lys Gly Asn Ser Trp Gln Ser Glu Arg Gly
 165 170 175
 Trp Glu Cys Pro Val Ile Ile Asp Asn Met Met Asn Leu Glu Leu Leu
 180 185 190
 Phe Glu Ala Thr Lys Leu Ser Gly Asp Ser Thr Phe His Lys Val Ala
 195 200 205
 Val Ala His Ala Asp Arg Thr Leu Ser Glu His Phe Arg Pro Asp Gly
 210 215 220
 Ser Cys Tyr His Val Val Asp Tyr Asn Ile Ser Asp Gly Ser Val Arg
 225 230 235 240
 His Lys Gln Thr Ala Gln Gly Tyr Ala Asp Glu Ser Val Trp Ser Arg
 245 250 255
 Gly Gln Ala Trp Ala Ile Tyr Gly Phe Thr Ile Cys Tyr Arg Glu Thr
 260 265 270
 Lys Asp Arg Lys Tyr Leu Asp Gln Ala Leu Lys Thr Phe Asn Arg Met
 275 280 285

Lys Asn Asp Pro His Met Pro Glu Asp Leu Ile Pro Tyr Trp Asp Met
 290 295 300
 Asp Ala Pro Asn Ile Pro Asp Glu Pro Arg Asp Val Ser Ser Ala Ser
 305 310 315 320
 Cys Ile Ala Ser Ala Leu Tyr Glu Ile Ser Thr Tyr Asp Val Pro Asp
 325 330 335
 Ala Ala Ser Tyr Arg Glu Tyr Ala Asp Arg Ile Met His Ser Leu Ala
 340 345 350
 Ser Pro Asp Tyr Arg Ala Ala Leu Gly Thr Asn Gly Asn Phe Ile Leu
 355 360 365
 Met His Ser Val Gly Ser Ile Pro His Asn Ser Glu Ile Asp Val Pro
 370 375 380
 Leu Asn Tyr Ala Asp Tyr Tyr Phe Leu Glu Ala Leu Lys Arg Arg Lys
 385 390 395 400
 Asp Leu Asp Lys

<210> 9967

<211> 474

<212> PRT

<213> B.fragilis

<400> 9967

Leu Leu Asp Phe Arg Lys Phe Asp Gln Asn Tyr Ile Gln Leu Lys Leu
 1 5 10 15
 Ser Glu Gln Ser Leu Asn Thr Phe Leu Glu Glu Val Tyr Leu Ser Phe
 20 25 30
 Ser Ala Tyr Ala Ser Gln Lys Ser Ile Ser Tyr His Leu Lys Leu Leu
 35 40 45
 Glu Gln Asp Ile Ser Ile Trp Ile Asp Asp Trp Gln Met Arg Lys Val
 50 55 60
 Leu Phe Asn Leu Leu Ser Asn Ala Phe Lys His Val Pro Asp Lys Gly
 65 70 75 80
 Glu Ile Ser Ile Leu Thr Ser Thr Thr Pro Asp Gln Val Val Ile Ala
 85 90 95
 Val Lys Asp Ser Gly Asn Gly Ile Ser Lys Glu Glu Gln Glu Arg Ile
 100 105 110
 Phe Asp Arg Phe Tyr Gln Ala Asp Asn Arg Asn Lys Ala Ile His Val
 115 120 125
 Gly Thr Gly Ile Gly Leu Ala Leu Thr Lys Ser Ile Ile Gln Leu His
 130 135 140
 His Gly Thr Ile Glu Val Glu Ser Glu Leu Asn Glu Gly Ser Cys Phe
 145 150 155 160
 Ile Val Lys Leu Pro Lys Thr Arg Asp Cys Phe Glu Lys Asp Thr Glu
 165 170 175
 Val Val Phe Leu Glu Ser Pro Glu Lys Glu Pro Met Val Gln Glu Asn
 180 185 190
 Thr Ile Pro Asp Glu Asn Phe Met Lys Lys Asp Asp Ser Thr Phe Glu
 195 200 205
 Thr Pro Leu Ile Asp Glu Arg Glu Gly Lys Arg Lys Val Leu Leu Val
 210 215 220
 Glu Asp Asn Val Glu Leu Leu Gln Val Leu Lys Glu Ile Phe Ser Ser
 225 230 235 240
 Leu Tyr Gln Val Val Thr Ala Ala Asn Gly Glu Glu Gly Leu Lys Gln
 245 250 255
 Ala Phe Ala Glu Val Pro Asp Leu Ile Val Ser Asp Val Met Met Pro
 260 265 270
 Val Met Thr Gly Thr Glu Met Cys Leu Lys Ile Lys Asn Asn Ile Asn
 275 280 285

Leu Cys His Ile Pro Val Val Leu Leu Thr Ala Leu Asp Thr Val Asp
 290 295 300
 Gln Asn Ile Glu Gly Leu Arg Arg Gly Ala Asp Asp Tyr Ile Thr Lys
 305 310 315 320
 Pro Phe Asn Ala Lys Ile Leu Ile Thr Arg Cys Asn Asn Leu Ile Arg
 325 330 335
 Asn Arg Leu Leu Met Gln Ser Arg Phe Ala Lys Asp Gln Ile Leu Glu
 340 345 350
 Ile Asn Leu Leu Ala Ala Asn Pro Ile Asp Lys Gly Phe Leu Asp Arg
 355 360 365
 Val Ile Lys Val Val Asp Lys His Ile Asp Asn Glu Asp Phe Asp Ile
 370 375 380
 Gly Tyr Val Cys Gln Glu Leu Glu Met Gly Arg Thr Leu Leu His Thr
 385 390 395 400
 Asn Phe Lys Ala Leu Thr Gly Met Thr Pro Asn Glu Phe Ile Leu Asn
 405 410 415
 His Arg Leu Lys Ile Ala Ser Leu Met Leu Lys Asn Glu Pro Tyr Leu
 420 425 430
 Gln Val Ala Glu Ile Ser Asp Arg Leu Gly Phe Gly Ser Pro Arg Tyr
 435 440 445
 Phe Ser Arg Cys Phe Lys Asn Gln Tyr Asn Val Thr Pro Met Glu Tyr
 450 455 460
 Arg Lys Gly Ala Lys Gln Glu Asn Leu Lys
 465 470

<210> 9968

<211> 370

<212> PRT

<213> B.fragilis

<400> 9968

Lys Ile Gln Val Leu Phe Val His Leu His Pro Phe Lys Ala Lys Lys
 1 5 10 15
 Glu Met Ile Asp Glu Ser Ile Thr Ser Glu Ala Val Gly Leu Leu Lys
 20 25 30
 Ser Leu Ile Ser Ile Pro Ser Leu Ser Arg Glu Glu Glu Lys Ala Ala
 35 40 45
 Asp Tyr Leu Gln Asn Tyr Ile Glu Ala Glu Gly Met Thr Thr Gly Arg
 50 55 60
 Lys Gly Asn Asn Ile Trp Cys Leu Ser Pro Met Phe Asp Leu Lys Lys
 65 70 75 80
 Pro Thr Ile Leu Leu Asn Ser His Ile Asp Thr Val Lys Pro Val Asn
 85 90 95
 Gly Trp Arg Lys Asp Pro Phe Thr Pro Arg Glu Glu Asn Gly Lys Leu
 100 105 110
 Tyr Gly Leu Gly Ser Asn Asp Ala Gly Ala Ser Val Val Thr Leu Leu
 115 120 125
 Gln Val Phe Leu Gln Leu Cys Arg Lys Gln Gln Ser Tyr Asn Leu Ile
 130 135 140
 Tyr Leu Ala Ser Cys Glu Glu Glu Val Ser Gly Lys Gly Gly Ile Glu
 145 150 155 160
 Ser Val Leu Pro Gly Leu Pro Pro Ile Ser Phe Ala Val Val Gly Glu
 165 170 175
 Pro Thr Glu Met Gln Pro Ala Ile Ala Glu Lys Gly Leu Met Val Leu
 180 185 190
 Asp Val Thr Ala Thr Gly Lys Ala Gly His Ala Ala Arg Asn Glu Gly
 195 200 205
 Asp Asn Ala Ile Tyr Lys Val Leu Asp Asp Ile Ala Trp Phe Arg Asp
 210 215 220

Tyr Arg Phe Ala Lys Glu Ser Pro Leu Leu Gly Pro Val Lys Met Ser
 225 230 235 240
 Val Thr Val Ile Asn Ala Gly Thr Gln His Asn Val Ile Pro Asp Arg
 245 250 255
 Cys Ser Phe Val Val Asp Val Arg Ser Asn Glu Leu Tyr Ser Asn Glu
 260 265 270
 Glu Leu Phe Thr Glu Ile Gln Lys His Ile Ser Cys Lys Ala Glu Ala
 275 280 285
 Arg Ser Phe Arg Leu Asn Ser Ser Arg Ile Glu Glu Ser His Pro Phe
 290 295 300
 Val Gln Lys Ala Lys Lys Leu Gly Arg Val Pro Phe Gly Ser Pro Thr
 305 310 315 320
 Leu Ser Asp Gln Ala Leu Met Val Phe Pro Ser Val Lys Ile Gly Pro
 325 330 335
 Gly Arg Ser Ser Arg Ser His Thr Ala Asp Glu Tyr Ile Met Ile Lys
 340 345 350
 Glu Ile Glu Glu Ala Leu Glu Leu Tyr Leu Lys Ile Leu Asp Gly Leu
 355 360 365
 Glu Ile
 370

<210> 9969
 <211> 170
 <212> PRT
 <213> B.fragilis

<400> 9969
 Val Thr Met Ser Ile Asp Phe Phe Ile Ala Lys Cys Gln Thr Glu Asn
 1 5 10 15
 Ile Val Asp Lys Glu Phe Gly Ile Cys Asp Asp Glu Asp Glu Glu Lys
 20 25 30
 Lys Thr Pro Ala Tyr Val Asp Arg Asn Gln Pro Asp Lys Trp Val Ala
 35 40 45
 Val Val Lys Asn Gln Thr Asn Gln Ser Ile Asn Phe Thr Ala Val Asp
 50 55 60
 Asn Cys Val Glu Met Asn Arg Ser Asp Gly Thr Met Asp Phe Arg Cys
 65 70 75 80
 Asp Ala Met Leu Thr Asn Asp Asp Asn Ile Val Phe Val Glu Leu Lys
 85 90 95
 Val Gln Ala Ala Asp Trp Ile Phe His Ala Val Asp Glu Gln Leu Gln
 100 105 110
 Thr Thr Ile Asp His Phe Lys Ala Asn His Asp Leu Ser Arg Tyr Lys
 115 120 125
 Tyr Lys Arg Ala Phe Val Cys Asn Lys Arg His Pro Asn Phe Arg Val
 130 135 140
 Ser Tyr Lys Asp Lys Met Thr Ser Phe Ser Met Lys Asn Gly Ile Arg
 145 150 155 160
 Leu Asn Leu Val Arg Glu Ile Ile Phe Lys
 165 170

<210> 9970
 <211> 299
 <212> PRT
 <213> B.fragilis

<400> 9970
 Leu Leu Pro Thr Ser Phe Cys Ile Ser Phe His Ser Leu His Asn His
 1 5 10 15
 Cys Pro Phe Pro Leu His Asn Thr Phe Phe Leu Phe Ser Thr Ala Leu

20 25 30
 Leu Pro Pro Phe Pro His Tyr Asn Ile Phe Leu Phe Phe Ile Lys Ile
 35 40 45
 Phe Phe Thr Phe Pro Phe Phe Ser Phe Pro Pro Phe Thr Leu Leu Pro
 50 55 60
 Ser Leu Phe Leu Phe Leu Arg Phe Ser Phe Ile Ser Phe Ser Leu Ser
 65 70 75 80
 Phe Phe Leu Leu Phe Phe Leu Ser Phe Pro His Pro Pro Leu Pro Leu
 85 90 95
 Leu Leu Leu Ser Leu Phe Ser Leu Leu Ile Pro Thr Pro Leu Phe Phe
 100 105 110
 Ser His Leu Phe Leu Phe Ser Ser Leu Ser Phe Leu Ser Ile Ser Phe
 115 120 125
 Pro Leu Ile Leu Ser Phe Leu Ser Ser Tyr Phe Leu Phe Ser Phe Pro
 130 135 140
 Leu Leu Ile Thr Phe Ser Ser Glu Thr Leu Leu Leu Phe Leu Leu Leu
 145 150 155 160
 Phe Leu Ser Phe Leu Ser Leu Leu Thr Phe Phe Phe His Ser His Pro
 165 170 175
 Ser Pro Pro Phe Leu Phe His Leu Cys Leu Phe Tyr Pro Ser Leu Phe
 180 185 190
 Leu Ser Leu Pro Ser Pro Ser Ser Pro Ser Leu Ile Pro Ser Leu Tyr
 195 200 205
 Ser Pro Leu Leu Cys Pro Pro Pro Pro Ser Ser Ser Tyr Phe
 210 215 220
 Thr Pro Ile Pro Leu Leu Leu Ser Phe Leu Phe His Ile Phe His
 225 230 235 240
 Pro Pro Phe Ser Ser Ser Leu Thr Phe Pro Ser Leu Ser Pro Phe Leu
 245 250 255
 Ile Leu His Leu Phe Leu Leu Phe Ser Pro Leu Pro Leu Leu Phe Cys
 260 265 270
 Tyr Leu Pro Ser Ser Phe Pro Phe Ser Ser Phe Pro Tyr Asn Tyr Ser
 275 280 285
 Leu Phe Leu Leu Ser His Ser Pro Leu Ser Phe
 290 295

<210> 9971
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 9971
 Glu Thr Tyr Thr Leu Leu Leu Lys Arg Tyr Lys Ser Asp Asp Val Glu
 1 5 10 15
 Gly Glu Tyr Gln Asn Tyr Ile Val Ser Ala Val Ile Gln Ile Lys Ser
 20 25 30
 Asn Lys Ile Leu Leu Phe Thr Asp Ser Tyr Phe Ser Phe Ser Gly Ser
 35 40 45
 Thr Arg Thr Val Glu Val Arg Asn Gly Trp Phe Leu Trp Arg Arg Thr
 50 55 60
 Ala Leu Leu Ser Arg
 65

<210> 9972
 <211> 405
 <212> PRT
 <213> B.fragilis

<400> 9972

Asp Val Ser Ala Val Gly Thr Phe Arg Arg Lys Ile Gly Gly Leu Trp
 1 5 10 15
 Ala Ala Val Asn Ile Val Leu Pro Asp Leu Thr Ala Gly Ser Thr Glu
 20 25 30
 Gly Val Ile Asp Phe Ala Gly Val Thr Ser Gly Met Leu Thr His Asp
 35 40 45
 Gly Gly Gln Asp Thr Asp Asn Ile Ile Ala Val Arg Val Lys Ala Asn
 50 55 60
 Asp Arg Trp Ser Asp Ala Gly Met Tyr Thr Ile Arg Thr Val Lys Pro
 65 70 75 80
 Val Phe Lys Val Gly Tyr Tyr Pro Gly Asn Val Trp Thr Lys Glu Phe
 85 90 95
 Thr Leu Asn Thr Leu Thr Ala Asp Ser Val Lys Thr Gly Asn Leu Asp
 100 105 110
 Lys Phe Thr Asp Ile Ala Tyr Glu Phe Ser Ala Asp Gly Asn Ser Trp
 115 120 125
 Glu Ala Met Pro Gly Asp Leu Arg Lys Ala Gly Leu Ser Pro Gly Thr
 130 135 140
 Ser Tyr Tyr Val Arg Ala Lys Tyr Arg Gly Glu Val Pro Gly Glu Lys
 145 150 155 160
 Val Glu Val Lys Thr Tyr Glu Ala Leu Ser Ile Pro Asn Ser Asp Phe
 165 170 175
 Asn Ala Gly Tyr Asp Val Thr Tyr Pro Lys Ser Glu Asn Pro Leu Tyr
 180 185 190
 Thr Phe Lys Gly Asp Trp Ile Gly Thr Arg Asn Pro Leu Thr Cys His
 195 200 205
 Thr Asp Gly Ala Asn Ala Phe Tyr Val Ser Lys Ser Ser Thr Leu Pro
 210 215 220
 Val Val Asp Gly Glu Arg Asn Val Ala His Met Met Thr Leu Gly Trp
 225 230 235 240
 Gly Ala Gly Asn Thr Cys Ser Phe Gly Asn Lys Asp Tyr Trp Leu Gly
 245 250 255
 Asn Ser Val Ile Asn His Ile Ser Ala Gly Ile Val Cys Val Gly Asp
 260 265 270
 Tyr Glu Ala Ala Gly Asp Val Val Asn Gly Lys Ala Ala Tyr Ile Arg
 275 280 285
 Pro Thr Ser Met Ser Phe Val Tyr Lys Ala Ala Pro Tyr Lys Asp Asp
 290 295 300
 Glu Tyr Leu Ile Glu Ala Tyr Leu Glu Asn Ile Thr Gly Glu Val Glu
 305 310 315 320
 Thr Ile Ile Gly Lys Ala Tyr Leu Lys Ser Gly Thr Ala Tyr Ser Ser
 325 330 335
 Tyr Gln Thr Gln Thr Leu Asn Phe Glu Tyr Asn Asn Glu His Arg Asn
 340 345 350
 Leu Pro Ile Ser His Val Lys Ile Ile Phe Lys Ala Gly Thr Lys Glu
 355 360 365
 Asp Arg Asp His Leu Glu Asp Lys Phe Arg Asp Ala Lys Val Pro Tyr
 370 375 380
 Gly Asp Ala Tyr Ile Ile Gly Ser Gln Phe Trp Leu Asp Ser Phe Thr
 385 390 395 400
 Leu His Tyr Asp Lys
 405

<210> 9973

<211> 246

<212> PRT

<213> B.fragilis

<400> 9973

Cys Leu Tyr His Arg Phe Thr Val Leu Ala Arg Phe Ile His Phe Thr
 1 5 10 15
 Leu Arg Gln Ile Asn Met Lys Thr Tyr Ile Tyr Leu Phe Leu Leu Leu
 20 25 30
 Leu Ala Thr Ala Ser Cys Ser Glu Gln Thr Ala Pro Asp His Ser Val
 35 40 45
 Gly Tyr Leu Arg Val Glu Asn Ile Ile Leu Ser Cys Asp Thr Glu Thr
 50 55 60
 Leu Pro Ile Thr Arg Ala Val Asp Ala Gly Leu Lys Leu Glu Ile Trp
 65 70 75 80
 Gln Gly Ser Glu Cys Val Arg Ser Tyr Asp Pro Gly Ala Ala Glu Leu
 85 90 95
 Ser Lys Arg Ile Val Leu Pro Val Gly Glu Tyr Thr Leu Lys Ala Phe
 100 105 110
 Thr Pro Asp Gln Thr Glu Ala Pro Asp Asn Glu Ser Gly Thr Pro Ile
 115 120 125
 Tyr Ser Val Asp Tyr Pro Phe Ala Ile Val Ser Glu Asp Val Thr Leu
 130 135 140
 Ile Ser Val Lys Ala Pro Gln Ile Asn Ile Gly Val Gly Val Glu Tyr
 145 150 155 160
 Ser Asp Glu Phe Met Ala Asn Phe Thr Asp Phe Ser Val Thr Val Ser
 165 170 175
 Ser Pro Thr Gly Arg Gln Ala Ser Leu Ala Gly Asn Val Thr Asp Leu
 180 185 190
 Leu Tyr Phe Asn Val Pro Thr Gly Gly Thr His Leu Ser Tyr Thr Leu
 195 200 205
 Thr Ala Thr Asn Ala Asp Gly Glu Thr Met Thr Ser Glu Ala Arg Ser
 210 215 220
 Ile Leu Gln Glu Ser Gly Ala Glu Leu Thr Ser Gly Asn Tyr Lys Val
 225 230 235 240
 Arg Ile Gly Leu Val Gln
 245

<210> 9974

<211> 199

<212> PRT

<213> B.fragilis

<400> 9974

Phe Cys Lys His Ile Arg Ile Pro Tyr Ile Leu Phe Leu Ser Lys Val
 1 5 10 15
 Ile Phe Ile Leu Phe Ile Leu Phe His Phe Phe Val Tyr Leu Leu Arg
 20 25 30
 Thr Glu His Phe Asn Gly Asn Arg Cys Ser Lys Ser Lys Lys Asn Met
 35 40 45
 Glu Thr Glu Glu Glu Ile Gln Asn Val Asn Val His His Gly His Asn
 50 55 60
 Ile Arg Arg Thr Arg Ile Glu Lys Asn Ile Lys Gln Asp Ala Leu Ala
 65 70 75 80
 Ala Leu Val Asn Met Thr Gln Pro Asn Val Ser Lys Tyr Glu Lys Met
 85 90 95
 Arg Val Ile Glu Asp Glu Met Leu Asn Arg Phe Ala Arg Ala Leu Asn
 100 105 110
 Val Pro Val Glu Tyr Leu Lys Thr Leu Glu Glu Asp Ala Pro Ser Val
 115 120 125
 Val Phe Glu Asn Ile Thr Asn Asn Val His Asp Asn Lys Asp Ser Ser
 130 135 140
 Val Pro Ile Thr Gly Tyr Lys Gly Gln Asp Ala Thr Thr Asn Ser Phe
 145 150 155 160

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<210> 9975
<211> 85
<212> PRT
<213> B.fragilis
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[illegible]

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<210> 9976
<211> 244
<212> PRT
<213> B.fragilis
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<221> UNSURE

<222> (27), (71), (93), (130), (171), (174), (201), (203)

<223> Identity of amino acid sequences at the above locations are unknown.

Arg	Leu	Val	Glu	Val	Glu	Asn	Gln	Ala	Leu	Pro	Ala	Ile	Ile	Asp	Asp
1				5					10					15	
Lys	Asn	His	Thr	Val	Leu	Val	Tyr	Val	Ser	Xaa	Lys	Gln	Asp	Leu	Ser
			20					25					30		
Ala	Val	Lys	Ile	Thr	Lys	Met	Ile	Leu	Gly	Gly	Ser	Lys	Ala	Thr	Ile
		35					40					45			
Thr	Pro	Asp	Pro	Ser	Thr	Val	Thr	Asn	Phe	Arg	Arg	Pro	Gln	Glu	Phe
	50					55					60				
Val	Val	Asn	Arg	Phe	Asp	Xaa	Glu	Glu	Leu	Trp	Thr	Val	Asp	Val	Val
65					70					75					80
Arg	Thr	Thr	Ser	Thr	Gly	Thr	Thr	Gly	Ser	Ala	Asp	Xaa	Trp	Ala	Thr
				85					90					95	
Arg	Ala	Thr	Leu	Asn	Gly	Gly	Met	Lys	Gln	Gly	Thr	Thr	Pro	Arg	Val
			100					105					110		
Glu	Tyr	Arg	Lys	Lys	Ser	Glu	Asp	Thr	Trp	Thr	Val	Val	Pro	Glu	Thr
		115					120					125			
Asp	Xaa	Lys	Leu	Glu	Ser	Gly	Thr	Thr	Phe	Ser	Thr	Thr	Leu	Thr	Gly
	130					135					140				
Leu	Gln	Asp	Gly	Thr	Asp	Tyr	Val	Trp	Arg	Val	Val	Val	Glu	Glu	Val
145					150					155					160
Pro	Ser	Thr	Glu	Ser	Gly	Phe	Thr	Thr	Glu	Xaa	Ile	Gln	Xaa	Ile	Pro
				165					170					175	

Asn	Leu	Asn	Phe	Asp	Thr	Trp	Ser	Gln	Asn	Pro	Thr	Gly	Thr	Phe	Lys
			180					185					190		
Lys	Ser	Trp	Tyr	Pro	Asn	Ala	Asp	Xaa	Ser	Xaa	Ser	Phe	Trp	Ala	Thr
			195				200					205			
Gly	Asn	Asp	Gly	Val	Thr	Ser	Ser	Leu	Ala	Gly	Ser	Arg	Asp	Ser	Ser
	210					215					220				
Thr	Arg	Pro	Gly	Arg	Lys	Glu	Arg	Cys	Glu	Arg	Lys	Gly	Gly	Leu	Tyr
225					230					235					240
Gly	His	Phe	Met												

<210> 9977

<211> 183

<212> PRT

<213> B.fragilis

<400> 9977

Pro	Leu	His	Trp	Arg	Ala	Ala	Val	Ile	Arg	Val	Pro	Ala	Pro	Glu	Glu
1				5					10					15	
Lys	Ser	Val	Val	Asn	Gly	Lys	Ala	Ala	Tyr	Met	Val	Thr	Leu	Cys	Ser
			20					25					30		
Val	Pro	Leu	Val	Gly	Val	Ala	Ala	Gly	Asn	Leu	Phe	Ile	Gly	Asp	Tyr
		35					40					45			
Lys	Thr	Asn	Ala	Gln	Ser	Pro	Lys	Asp	Ser	Pro	Lys	Phe	Gly	Arg	Ser
	50					55				60					
Phe	Thr	Gly	Ala	Arg	Pro	Thr	Gly	Leu	Lys	Gly	Trp	Tyr	Lys	Tyr	Thr
65					70					75					80
Ser	Lys	Pro	Val	Asp	Tyr	Val	Gly	Asn	Pro	Asp	Asn	Leu	Lys	Asn	Asp
				85					90					95	
Glu	Cys	His	Ile	Tyr	Leu	Arg	Leu	Trp	Asp	Asp	Lys	Asp	Asn	Glu	Ile
			100					105					110		
Gly	Tyr	Gly	Glu	Phe	Ile	Gly	Lys	Glu	Thr	Val	Thr	Gln	Tyr	Thr	Gln
		115					120					125			
Phe	Arg	Phe	Asp	Val	Thr	Tyr	Thr	Asn	Lys	Thr	Ala	Lys	Pro	Ala	Lys
	130					135					140				
Ile	Thr	Ile	Val	Ala	Thr	Ser	Ser	His	Tyr	Gly	Gly	Asp	Phe	Thr	Gly
145					150					155					160
Met	Lys	Val	Thr	Gly	Ser	Val	Gly	Val	Gly	Ser	Glu	Leu	Trp	Val	Asp
				165					170					175	
Glu	Phe	Glu	Leu	Leu	Tyr	Glu									
			180												

<210> 9978

<211> 329

<212> PRT

<213> B.fragilis

<400> 9978

Ile	Arg	Lys	Arg	Ala	Met	His	Lys	Ser	Val	Leu	Ser	Leu	Val	Cys	Cys
1				5					10					15	
Leu	Phe	Phe	Phe	Leu	Ser	Cys	Gln	Glu	Glu	Ile	Glu	Thr	Met	Pro	Asn
			20					25					30		
Gly	Ser	Leu	Asn	Ile	Val	Leu	Thr	Asp	Glu	Ala	Ala	Val	Thr	Arg	Thr
		35					40					45			
Leu	Pro	Glu	Ala	Leu	Ser	Asp	Glu	Leu	Arg	Gln	Gln	Phe	Thr	Ile	Glu
	50					55					60				
Leu	Leu	Arg	Asp	Arg	Glu	Gly	Thr	Ile	Val	Pro	Glu	Tyr	Lys	Gly	Ala
65				70						75					80
Leu	Arg	Asp	Phe	Gly	Asp	Gln	Arg	Val	Phe	Lys	Val	Gly	Ser	Tyr	Gln

[illegible]

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

Figure 1

Thr Thr Lys Glu Leu Asp Phe Leu Thr Lys Leu Ala Glu Leu Leu Lys
 35 40 45
 Glu Tyr Ser Ala Ile Ile Ser Tyr Gly His Cys Ser Glu Leu Arg Ile
 50 55 60
 Leu Val Cys Ala Gly Asp Ser Glu Asp Val Glu Lys Tyr Pro Ile Ile
 65 70 75 80
 Phe Glu Asp Ser Phe Asp Glu Asn Glu Ile Tyr Asp Leu Leu Arg Lys
 85 90 95
 Asn Arg Lys Arg Ile Glu Glu Ile Ile Glu Arg Glu Val Ala Glu Ala
 100 105 110
 Val Pro Glu Gly Glu Leu Ser Gln Pro Asp Asp Gln Ala Gly Ser Met
 115 120 125
 Ala Asp His Phe His
 130

<210> 9981

<211> 422

<212> PRT

<213> B.fragilis

<400> 9981

Cys Ile Phe Val Val Tyr Leu Asn Val Asn Ile Asn Arg Gly Leu Phe
 1 5 10 15
 Met Asn Glu Thr Val Asn Leu Thr Val Tyr Gln Phe Gly Pro Ile Ser
 20 25 30
 Glu Ala Asp Val Val Phe Asp Lys Tyr Thr Val Leu Ile Gly Lys Gln
 35 40 45
 Gly Ser Gly Lys Ser Thr Ile Ala Lys Leu Tyr Ser Met Phe Thr Trp
 50 55 60
 Leu Glu Lys Gly Leu Ala Arg Arg Ile Thr Ser Glu Lys Tyr Ile Thr
 65 70 75 80
 Gln Tyr Ser Arg Phe Gln Lys Ile Tyr Cys Ala Tyr His Arg Leu Glu
 85 90 95
 Ser Tyr Phe Lys Arg Glu Thr Val Ile Arg Phe Tyr Gly Leu His Tyr
 100 105 110
 Asn Phe Phe Tyr Glu Asn Glu Lys Phe His Val Glu Ala Lys Gly Leu
 115 120 125
 Pro Glu Ser Tyr Lys Val Ala Lys Val Met Tyr Val Pro Ala Glu Arg
 130 135 140
 Asn Phe Leu Ser Thr Ala Asp Asp Thr Asp Gly Leu Lys Ser Leu Pro
 145 150 155 160
 Glu Ser Leu Glu Thr Leu Leu Glu Glu Phe Asp Lys Ala Lys Glu Ala
 165 170 175
 Phe Lys Thr Gly Tyr Arg Leu Pro Phe Asn Asp Thr Asp Phe Glu Tyr
 180 185 190
 Asp Ala Leu Asn Lys Ile Ser Trp Ile Lys Gly Ser Asp Tyr Lys Ile
 195 200 205
 Arg Leu Ser Ala Ala Ser Ser Gly Tyr Gln Ser Val Leu Pro Leu Ser
 210 215 220
 Leu Ile Thr Arg Phe Leu Ser Asp Leu Val Leu Asp Asn Ala Asn Lys
 225 230 235 240
 Glu Asp Leu Ser Ile Lys Glu Lys Lys Gln Ile Glu Lys Glu Val Asn
 245 250 255
 Lys Val Met Asn Asp Lys Ser Leu Thr Asp Gly Val Lys Phe Ala Met
 260 265 270
 Leu Arg Asn Ile Ser Ser Arg Phe Lys Tyr Ser Cys Phe Val Asn Ile
 275 280 285
 Val Glu Glu Met Glu Leu Asn Leu Tyr Pro Glu Ser Gln Arg Ser Val
 290 295 300

Leu Phe Asp Leu Leu Ser Tyr Ala Asn Lys Ile Glu Leu Asn Arg Leu
 305 310 315 320
 Val Leu Thr Thr His Ser Pro Tyr Val Ile Asn Tyr Leu Thr Leu Ala
 325 330 335
 Ala Lys Ala Phe Leu Leu Thr Gln Lys Val Ser Ala Asn Glu Thr Leu
 340 345 350
 Gln Glu Arg Ile Lys Glu Val Val Pro Ala Asp Ser Thr Ile Asp Pro
 355 360 365
 Ala Arg Leu Arg Ile Tyr Glu Leu Lys Asp Gly Gly Val Phe Arg Leu
 370 375 380
 Ser Thr Tyr Glu Gly Leu Pro Ser Asp Glu Asn Phe Leu Asn Ile Gln
 385 390 395 400
 Leu Gly Val Thr Asn Glu Leu Phe Asp Gln Leu Leu Glu Ile Glu Gln
 405 410 415
 Glu Phe Asp Tyr Lys Asn
 420

<210> 9982

<211> 681

<212> PRT

<213> B.fragilis

<400> 9982

Phe Ser Val Pro His Gln Pro Met Val Met Tyr Asp Arg Gln Asn Ile
 1 5 10 15
 Thr Arg Gln Ala Gln His Gln Gly Tyr Pro Val Thr Met Glu Lys Asn
 20 25 30
 Pro Asp Gly Thr Trp Thr Glu Ala Ala Val Tyr Ile Gly Trp Ala Gly
 35 40 45
 Phe Val Glu Gly Thr Ser Trp Gln Lys Asp Asn Lys Leu Asp Val Arg
 50 55 60
 Asn Thr Thr Thr Leu Thr Tyr Thr Pro Ile Lys Gln Gln Leu Ile Phe
 65 70 75 80
 Lys Gly Asp Phe Thr Tyr Tyr Ser Ser Lys Ser Thr Arg Leu Arg Ala
 85 90 95
 Glu Asn Gln Tyr Asn Tyr Tyr Thr Gly Pro Glu Ile Met Gly Thr Arg
 100 105 110
 Asn Thr Phe Ser Ser Leu Glu Asn Met Asp Tyr Asn Arg Glu Tyr Ile
 115 120 125
 Ser Ser Asn Ile Thr Gly Asn Tyr Ile Pro Lys Phe Ser Asn Ser Asp
 130 135 140
 His Tyr Leu Asn Val Leu Leu Gly Trp Asn Leu Glu His Gln Asp Tyr
 145 150 155 160
 Lys Thr Ile Gln Thr Tyr Arg Arg Gly Leu Ile Ser Ala Thr Lys Pro
 165 170 175
 Ser Phe Ala Leu Met Asp Gly Asp Tyr Tyr Thr Thr Gly Gln Gly Gly
 180 185 190
 Asn Glu Trp Ala Tyr Val Gly Phe Leu Tyr Arg Leu Asn Tyr Asn Tyr
 195 200 205
 Lys Ser Arg Tyr Leu Ala Glu Val Ser Gly Arg Tyr Asp Ala Ser Ser
 210 215 220
 Lys Phe Pro Glu Asn Gln Gln Trp Gly Phe Phe Pro Ser Gly Ser Leu
 225 230 235 240
 Gly Trp Arg Ile Ser Glu Glu Pro Phe Met Lys Ser Thr Arg Asn Trp
 245 250 255
 Leu Asp Asn Leu Lys Val Arg Ala Ser Val Gly Ser Leu Gly Asn Gly
 260 265 270
 Asn Val Ser Pro Tyr Leu Tyr Leu Ser Thr Ile Pro Ile Lys Lys Thr
 275 280 285

Ser Val Ile Leu Gly Asp Ala Leu Gln Thr Tyr Ala Thr Thr Pro Asn
 290 295 300
 Ile Val Pro Asn Ser Leu Thr Trp Glu Lys Ser Thr Thr Tyr Asp Ile
 305 310 315 320
 Gly Leu Asp Val Asp Met Leu Ser Asn Arg Leu Ser Met Val Phe Asp
 325 330 335
 Tyr Tyr Gln Arg Tyr Thr Thr Asp Met Tyr Thr Val Gly Pro Thr Leu
 340 345 350
 Pro Ala Val Leu Gly Ala Ala Thr Pro Lys Gly Asn Asn Ala Glu Met
 355 360 365
 Lys Thr Lys Gly Trp Glu Leu Ser Val Met Trp Arg Asp Asn Phe Thr
 370 375 380
 Leu Ala Asn Lys Pro Phe Asn Tyr Ser Val Lys Ala Met Leu Trp Asp
 385 390 395 400
 Asn Arg Thr Trp Val Thr Lys Phe Asn Asn Pro Thr Lys Leu Leu Ser
 405 410 415
 Thr Tyr Tyr Glu Gly Gln Glu Ile Gly Thr Ile Trp Gly Tyr His Ile
 420 425 430
 Glu Gly Leu Phe Lys Asp Gln Ala Glu Ile Asp Ala His Ala Asp Gln
 435 440 445
 Ser Lys Leu Lys Val Ser Ala Thr Asn Ile Leu Lys Pro Gly Asp Leu
 450 455 460
 Lys Phe Ala Asp Leu Asp Lys Ser Gly Thr Val Asp Asn Gly Gln Asn
 465 470 475 480
 Thr Leu Asp Asp His Gly Asp Leu Lys Val Ile Gly Asn Thr Thr Pro
 485 490 495
 Arg Tyr Gln Phe Gly Leu Asn Leu Ser Ala Asn Trp Asn Gly Ile Gly
 500 505 510
 Ile Cys Ala Phe Phe Gln Gly Val Gly Lys Arg Asn Trp Tyr Pro His
 515 520 525
 Arg Glu Ser Ala Phe Phe Trp Gly Gln Tyr Asp Arg Pro Tyr Ser Tyr
 530 535 540
 Met Leu Lys Glu His Thr Gly Asn Asn Val Trp Thr Glu Glu Asn Gln
 545 550 555 560
 Asn Thr Asp Ala Tyr Trp Pro Arg Tyr Arg Gly Tyr Leu Ala Asn Gly
 565 570 575
 Ser Thr Lys Ala Leu Gly Ile Gln Ala Asn Asp Arg Tyr Leu Gln Asn
 580 585 590
 Ile Ala Tyr Val Arg Leu Lys Asn Leu Gln Ile Asp Tyr Thr Phe Asn
 595 600 605
 Lys Lys Phe Cys Asp Lys Leu His Leu Gln Asp Leu Lys Ile Tyr Leu
 610 615 620
 Ala Gly Glu Asn Leu Leu Thr Trp Thr Pro Leu Asn Lys His Thr Lys
 625 630 635 640
 Met Tyr Asp Pro Glu Gly Ile Ser Ala Gly Asp Ala Asp Phe Arg Ser
 645 650 655
 Thr Ala Asn Thr Asp Gly Asp Gly Tyr Gly Tyr Pro Ile Leu Ser Ser
 660 665 670
 Tyr Thr Ile Gly Ile Asn Val Thr Phe
 675 680

<210> 9983

<211> 190

<212> PRT

<213> B.fragilis

<400> 9983

Asp Tyr Gln Ala Gln Ala Ala Ile Ala Arg Leu Thr Arg Asn Ala Ala
 1 5 10 15

Phe Arg Tyr Lys Ala Tyr Leu Glu Gln Ile Asp Tyr Ala Thr Asn Arg
 20 25 30
 Gly Leu Glu Arg Asn Gln Met Glu Arg Leu Ala Thr Leu Asp Tyr Val
 35 40 45
 His Lys Gly Gln Asn Leu Phe Ile Thr Gly Ser Ser Gly Thr Glu Lys
 50 55 60
 Ser Tyr Leu Ala Cys Ala Leu Gly His Glu Ala Cys Lys Lys Gly Phe
 65 70 75 80
 Arg Thr Leu Tyr Ala Asn Ala Pro Lys Leu Leu Gly Ala Leu Lys Val
 85 90 95
 Ala Lys Val Lys Gly Thr Gln Glu Thr Glu Leu Lys Lys Ile Glu Arg
 100 105 110
 Cys Gln Leu Leu Ile Leu Asp Asp Leu Phe Leu Val Pro Leu Asp Ala
 115 120 125
 Lys Glu Arg Pro Ile Leu Leu Glu Ile Ile Glu Asp Arg His Glu Arg
 130 135 140
 Lys Ser Ile Ile Ile Thr Ser Gln Tyr Pro Ser Phe Asn Trp Tyr Asp
 145 150 155 160
 Met Val Gly Asp Pro Thr Ile Ala Asp Ala Ile Leu Asp Arg Ile Ile
 165 170 175
 His Thr Ala His Thr Ile Glu Leu Tyr Gly Glu Ser Met Arg
 180 185 190

<210> 9984
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 9984
 Cys Asn Leu Leu Thr Gln Lys Met Ser Met Lys Lys Tyr Trp Leu Ile
 1 5 10 15
 Gly Leu Tyr Ala Leu Ala Leu Thr Ser Cys Asp Ser Phe Leu Asn Cys
 20 25 30
 Glu Pro Glu Asn Ser Phe Ser Ser Glu Gly Phe Leu Glu Ser Gln Ser
 35 40 45
 Asp Leu Arg Leu Tyr Thr Asn Gly Phe Leu Gln Ser Phe Leu Pro Ser
 50 55 60
 Glu Glu Thr Ile Ala Trp Gly Gly Asp Gln Tyr Ala Ser Ser Pro Arg
 65 70 75 80
 Gly Trp Lys Asp Gln Arg Gly Ala Lys
 85

<210> 9985
 <211> 130
 <212> PRT
 <213> B.fragilis

<400> 9985
 Ser His Ser Arg Thr Arg Ser Met Glu Arg Lys Val Ser Ala Val Gln
 1 5 10 15
 Val Gly Gly Ser Leu Gly Arg Ser His Tyr Val Asn Gly Lys Phe Ile
 20 25 30
 Ala Ser Asn Leu Gly Ile Ile Leu Thr Pro Thr Asn Asn Pro Glu Tyr
 35 40 45
 Pro Ile Asn Val Arg Phe Tyr Ser Met Tyr Ser Asn Ala Ile Arg Lys
 50 55 60
 Gln Ile Val Asn Glu Leu Ala Asn Gly Thr Ser Lys Leu Thr Ile Pro
 65 70 75 80
 Val Asn Asp Leu Met Asn Tyr Tyr Val Glu Tyr Phe His Ile Ser Lys

				85					90					95			
Gln	Asn	Gly	Leu	Val	Glu	Tyr	Cys	Asn	Lys	Ala	Ile	Val	Thr	Leu	Gln		
			100					105					110				
Gln	Lys	Leu	Asp	Lys	Glu	Lys	Asp	Asn	Phe	Asn	Lys	Arg	Ile	Asn	Ser		
		115					120					125					
Leu	Leu																
	130																

<210> 9986

<211> 207

<212> PRT

<213> B.fragilis

<400> 9986

Asn	Met	Lys	Arg	Ile	Leu	Thr	Leu	Ile	Leu	Ser	Phe	Cys	Cys	Leu	Leu		
1				5					10					15			
Ser	Phe	Val	Ser	Cys	Glu	Lys	Lys	Glu	Ile	Ala	Asp	Thr	Phe	Glu	Ala		
		20						25					30				
Asn	Ile	Arg	Lys	Leu	His	Gly	Asp	Tyr	Arg	Leu	Thr	Asp	Ile	His	Trp		
	35						40					45					
Pro	Gly	Leu	Ala	Val	Asp	Leu	Asn	His	Asp	Gly	Ile	Gly	His	Trp	Ala		
	50					55					60						
Leu	Leu	Tyr	Glu	Phe	Gln	Asn	Lys	Ile	Gly	Tyr	Tyr	Glu	Pro	Asp	Tyr		
65					70					75				80			
Thr	Ala	Ser	Val	Ser	Asp	Gly	Met	Val	Phe	Ser	His	Asp	Glu	Thr	Trp		
				85					90					95			
Ala	Arg	Pro	Ala	Thr	Ala	Phe	Asn	Leu	Thr	Ile	Pro	Cys	Pro	Arg	Tyr		
			100					105					110				
Ile	Val	Ser	Glu	Gly	Lys	Trp	Val	Cys	Ser	Gly	Ile	His	Gly	Ile	Gln		
	115						120					125					
Val	Thr	Leu	Arg	Ala	Asp	Val	Asp	Ser	Phe	Ser	Leu	Gln	Ser	Asn	Cys		
	130					135					140						
Ser	Arg	Ile	Phe	Pro	Ala	Tyr	Asn	Asp	Arg	Asp	Asp	Val	Phe	Leu	Ala		
145				150					155					160			
Asn	Ile	Lys	Asp	Ile	Ser	Leu	Val	Val	Leu	Ser	Tyr	Asp	Ala	Ala	Ser		
			165						170					175			
Phe	Arg	Ile	Gly	Val	His	Cys	Thr	Leu	Pro	Tyr	Asp	Arg	Pro	Asp	Gly		
	180							185					190				
Thr	Gln	Glu	Leu	Asn	Glu	Asn	Tyr	Leu	Tyr	Tyr	Glu	Tyr	Ser	Arg			
	195						200					205					

<210> 9987

<211> 79

<212> PRT

<213> B.fragilis

<400> 9987

Asp	Glu	Pro	Gly	Thr	Trp	Ala	Lys	Lys	Gly	Lys	Gly	Gly	Gly	Gly	Gly		
1				5					10					15			
Lys	Val	Gly	Gln	Glu	Ser	Phe	Leu	Thr	Ser	Ser	Lys	Ser	Pro	Ile	Leu		
		20						25					30				
Asp	Phe	Cys	Lys	Trp	Met	Glu	Glu	His	Pro	Gly	Thr	Gly	Asn	Pro	Phe		
	35					40						45					
Lys	Gly	Thr	Gly	Arg	Ser	Ala	Ile	Thr	Ala	Arg	Met	Asn	Tyr	Asn	Ser		
	50					55					60						
Ser	Tyr	Thr	Asp	Ile	Met	Leu	Tyr	Asn	Asn	Met	Ala	Cys	Thr	Ala			
65					70					75							

<210> 9988

<211> 92
 <212> PRT
 <213> B.fragilis

<400> 9988

Lys	Asp	Asn	Met	Thr	Glu	Gln	Glu	Val	Arg	Arg	Tyr	Leu	Arg	Lys	Met
1				5					10					15	
Ser	Glu	Gln	Asp	Ser	Gln	Ser	Ala	Phe	Arg	Glu	Phe	Tyr	Asp	Met	Thr
			20					25					30		
Tyr	Asp	Arg	Leu	Phe	Arg	Ile	Ala	Tyr	Tyr	Tyr	Thr	His	His	Glu	Glu
		35					40					45			
Trp	Ser	Gln	Lys	Ile	Val	Leu	Asp	Val	Phe	Met	Lys	Leu	Trp	Glu	Leu
	50					55					60				
Glu	Lys	Pro	Leu	Tyr	Phe	Ala	Pro	Phe	Gly	Gln	Ile	Gly	Phe	Thr	Thr
65					70					75					80
Leu	Gly	Arg	Asp	Met	Ile	Asp	Pro	Leu	Lys	Ser	Trp				
				85					90						

<210> 9989
 <211> 156
 <212> PRT
 <213> B.fragilis

<400> 9989

Arg	Gln	Lys	Met	Val	Ser	Leu	Val	Met	Val	Cys	Ser	Gly	Pro	Met	Ala
1				5					10					15	
Gly	Ile	Gln	Leu	Ile	Cys	Lys	Val	Lys	Arg	Arg	Pro	Pro	Gly	Gly	Ile
			20					25					30		
Asn	Asn	Val	Phe	Lys	Tyr	Ser	Thr	Asp	Trp	Tyr	Asn	Glu	Leu	Val	Arg
		35					40					45			
Arg	Asp	Ala	Asp	Pro	Ser	Leu	Asp	Lys	Val	Arg	Val	Asn	Asp	Lys	Gly
	50					55					60				
Glu	Tyr	Glu	Tyr	Phe	Gly	Asn	Thr	Asn	Trp	Leu	Asp	Ile	Ile	Tyr	Lys
65					70					75					80
Asp	Gln	Asn	Tyr	Ser	Thr	Glu	His	Asn	Val	Ser	Ile	Ser	Gly	Gly	Asn
				85				90						95	
Glu	Arg	Ala	Arg	Tyr	Tyr	Val	Ser	Gly	Arg	Tyr	Tyr	Asn	Gln	Asp	Gly
		100						105					110		
Ile	Tyr	Asn	Ala	Gly	Asp	Glu	Lys	Ser	Leu	Leu	Leu	Leu	Asn	Asn	Thr
		115				120							125		
Lys	Gly	Glu	Ile	Gln	Ile	Asn	Lys	Ser	Leu	Leu	Leu	Glu	Asn	Asn	Thr
	130					135						140			
Glu	Cys	His	Asp	Phe	Pro	Phe	Pro	Thr	Ser	Leu	Trp				
145					150					155					

<210> 9990
 <211> 299
 <212> PRT
 <213> B.fragilis

<400> 9990

Leu	Pro	Ser	Leu	Arg	Leu	Glu	Arg	Ile	Leu	Asn	Leu	Phe	Tyr	Gln	Leu
1				5					10					15	
Asn	Ser	Met	Lys	Val	Lys	Arg	Cys	Phe	Leu	Glu	Trp	Ser	Leu	Val	Ser
			20					25					30		
Arg	Arg	Phe	Ala	Val	Ala	Leu	Thr	Phe	Val	Leu	Glu	Gly	Gly	Met	Leu
		35					40					45			
Leu	Ala	Ala	Asn	Leu	Ile	Pro	Val	Lys	Gly	Val	Val	Lys	Asp	Thr	Ser
	50					55					60				

Gly Glu Pro Leu Ala Gly Val Thr Val Arg Ile Lys Asp Gly Lys Ser
 65 70 75 80
 Gly Thr Ile Thr Asp Val Asn Gly Tyr Phe Val Leu Asp Val Glu Lys
 85 90 95
 Gly Lys Lys Leu Leu Leu Ser Tyr Ile Gly Tyr Ser Glu Thr Glu Val
 100 105 110
 Leu Val Lys Asp Asp Gln Gln Met Gln Ile Val Leu Lys Glu Asp Val
 115 120 125
 Gln Gln Leu Gln Glu Val Val Val Gly Tyr Gly Thr Ala Lys Lys
 130 135 140
 Val Asn Leu Val Gly Ala Val Asp Gln Ile Asp Ser Lys Arg Ile Ala
 145 150 155 160
 Glu Arg Ser Asn Ser Asn Ile Ser Arg Ser Leu Gln Gly Met Val Pro
 165 170 175
 Gly Leu Asn Ile Thr Phe Ser Asp Gly Lys Pro Ser Arg Thr Pro Ser
 180 185 190
 Ile Asn Leu Arg Gly Thr Gly Ser Ile Gly Ala Gly Gly Ser Ala Leu
 195 200 205
 Val Leu Ile Asn Gly Val Glu Gly Asp Leu Asn Ser Val Asn Pro Ala
 210 215 220
 Asp Val Glu Ser Val Ser Val Leu Lys Asp Ala Ser Ser Ala Ala Ile
 225 230 235 240
 Tyr Gly Ala Arg Gly Ala Phe Cys Val Ile Leu Val Thr Thr Lys Asn
 245 250 255
 Ala Thr Ala Gly Lys Thr Lys Ile Asn Tyr Asn Gly Ser Phe Ser Met
 260 265 270
 His Gln Arg Thr Val Lys Thr Glu Asp Gly Ile Val Ser Asn Gly Leu
 275 280 285
 Gln Trp Thr Asp Gly Trp Tyr Thr Ala Tyr Leu
 290 295

<210> 9991
 <211> 600
 <212> PRT
 <213> B.fragilis

<400> 9991
 Ala Ala Met Thr Phe Cys Ser Met Leu Val Phe Cys Ser Phe Pro Thr
 1 5 10 15
 Leu Ala Gly Glu Ala Glu Ala Arg Val Val Leu Asn Met Asn Thr Gly
 20 25 30
 Trp Ala Phe His Arg Gly Glu Val Glu Ser Gly Gly Gln Pro Gly Leu
 35 40 45
 Asp Asp Ser Gly Trp Ile Ala Ala Thr Ile Pro His Ile Met Gln Leu
 50 55 60
 Glu Lys Lys His Cys Gly Gly Asp Ile Ile Tyr Asp Gly Val Gly Trp
 65 70 75 80
 Tyr Arg Arg Thr Phe Arg Val Pro Ser Gln Tyr Lys Asp Lys Gln Ile
 85 90 95
 Lys Ile Ser Phe Glu Gly Val Met Asn Ala Cys Glu Val Tyr Leu Asn
 100 105 110
 Gly Gln Lys Ile Ser Ala His Arg Gly Gly Tyr Val Gly Phe Val Thr
 115 120 125
 Asp Ile Thr Thr Arg Ile Asn Trp Asp Arg Asp Asn Leu Leu Ala Val
 130 135 140
 Arg Val Ser Ala Glu Tyr Asp Pro Leu Thr Pro Pro Gly Lys Pro Gln
 145 150 155 160
 Ala Gly Met Asp Phe Tyr Tyr Tyr Ser Gly Ile Tyr Arg Asp Val Glu
 165 170 175

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<210> 9992
<211> 374
<212> PRT
<213> B.fragilis
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<400> 9992

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Asn Val Gly Ser Gly Ser Arg Ser Leu Glu Ser Val Val Ser Arg Met
1          5          10          15
Gly Ile Asp Ile Phe Asp Asn Phe Tyr Arg Gly Lys Arg Val Leu Val
          20          25          30
Thr Gly His Thr Gly Phe Lys Gly Ser Trp Leu Ser Ile Trp Leu His
          35          40          45
Glu Leu Gly Ala Glu Val Ile Gly Val Ala Gln Asp Pro Phe Thr Ala
          50          55          60
Arg Asp Asn Phe Val Leu Ser Gly Ile Gly Glu Lys Ile Lys Ala Asp
65          70          75          80
Leu Arg Ala Asp Ile Arg Asp Gly Glu Arg Ile Lys Ala Ile Phe Gln
          85          90          95
Glu Tyr Gln Pro Glu Ile Val Phe His Leu Ala Ala Gln Pro Leu Val
          100          105          110
Arg Leu Ser Tyr Asp Ile Pro Val Glu Thr Tyr Glu Thr Asn Val Met
          115          120          125
Gly Thr Ile His Val Leu Glu Ala Val Arg Ser Thr Asp Ser Val Lys
          130          135          140
Val Gly Val Met Ile Thr Thr Asp Lys Cys Tyr Glu Asn Lys Glu Gln
145          150          155          160
Ile Trp Gly Tyr Arg Glu Asn Glu Pro Met Gly Gly Tyr Asp Pro Tyr
          165          170          175
Ser Ser Ser Lys Gly Ala Ala Glu Ile Ala Ile Ala Ser Trp Arg Arg
          180          185          190
Ser Phe Phe His Pro Glu Gln Tyr Asp Lys His Gly Lys Ser Ile Ala
          195          200          205
Ser Val Arg Ala Gly Asn Val Ile Gly Gly Gly Asp Trp Ala Leu Asp
          210          215          220
Arg Ile Ile Pro Asp Cys Ile Lys Ala Leu Glu Ser Gly Arg Thr Ile
225          230          235          240
Asp Ile Arg Ser Pro Lys Ala Val Arg Pro Trp Gln His Val Leu Glu
          245          250          255
Pro Leu Ser Gly Tyr Met Leu Leu Ala Gln Lys Met Trp Ser Asp Pro
          260          265          270
Thr Arg Tyr Cys Glu Gly Trp Asn Phe Gly Pro Arg Ala Glu Ser Ile
          275          280          285
Ser Thr Val Trp Asp Val Ala Thr Lys Val Val Asn Asn Tyr Gly Ser
290          295          300
Gly Glu Leu Arg Asp Leu Ser Asp Pro His Ala Leu His Glu Ala Lys
305          310          315          320
Leu Leu Met Leu Asp Ile Ser Lys Ala Lys Phe Arg Leu Gly Trp Glu
          325          330          335
Pro Lys Met Asn Ile Glu Gln Thr Val Glu Leu Thr Val Asp Trp Tyr
          340          345          350
Lys Arg Tyr Arg Glu Glu Glu Val Tyr Asp Val Cys Val Glu Gln Ile
          355          360          365
Val Asn Phe Ile Gln Lys
          370

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<210> 9993

<211> 298

<212> PRT

<213> B.fragilis

<400> 9993

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Leu Phe Lys Thr Ile Thr Met Lys Tyr Leu Ile Thr Gly Gly Cys Gly
1          5          10          15

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Phe Ile Gly Ser Asn Leu Ala Ala Glu Val Leu Lys Arg Gly Glu Glu
 20 25 30
 Leu Phe Val Leu Asp Asn Leu Phe Arg Tyr Gly Ser Gly Ser Asn Leu
 35 40 45
 Glu Trp Leu Arg Thr Lys Gly Asp Phe Thr Tyr Tyr Pro Tyr Asp Thr
 50 55 60
 Arg Asn Thr Asn Asp Val Glu Thr Val Ile Lys Glu Val Gln Pro Asp
 65 70 75 80
 Tyr Ile Phe His Leu Ala Gly Gln Val Ala Met Thr Thr Ser Ile Ser
 85 90 95
 Asn Pro Arg Leu Asp Tyr Glu Thr Asn Ala Leu Gly Thr Phe Asn Leu
 100 105 110
 Leu Asp Ala Val Arg Lys Tyr Ser Pro Asp Ser Val Ile Leu Tyr Ser
 115 120 125
 Ser Thr Asn Lys Val Tyr Gly Asp Phe Glu Tyr Leu His Phe Arg Glu
 130 135 140
 Glu Ser Thr Arg Tyr Val Cys Glu Glu Tyr Pro Asn Gly Phe Pro Glu
 145 150 155 160
 Ser Ile Ser Leu Asp Phe His Ser Pro Tyr Gly Cys Ser Lys Gly Cys
 165 170 175
 Ala Asp Gln Tyr Leu Leu Asp Phe His Arg Ile Tyr Gly Leu Lys Thr
 180 185 190
 Ile Val Phe Arg His Ser Ser Met Tyr Gly Ser Asn Gln His Ala Thr
 195 200 205
 Tyr Asp Gln Gly Trp Ile Gly Trp Phe Cys Gln Lys Ala Leu Glu Ile
 210 215 220
 Lys Asn His Thr Leu Gln Lys Pro Phe Thr Ile Ser Gly Thr Gly Lys
 225 230 235 240
 Gln Val Arg Asp Val Leu His Gly Glu Asp Val Val Asn Leu Tyr Phe
 245 250 255
 Thr Ala Lys Asp Ile Asp Lys Ala Tyr Gly Glu Val Phe Asn Ile Gly
 260 265 270
 Gly Gly Ile Glu Asn Ser Leu Ser Leu Ser Ser Pro Arg Gly Cys Asn
 275 280 285
 Glu Arg Cys His Trp Gly Met Gly Gly Arg
 290 295

<210> 9994

<211> 306

<212> PRT

<213> B.fragilis

<400> 9994

Leu Ile Leu Tyr Arg Asn Lys Met Glu Thr Val Phe Leu Ile Gly Gly
 1 5 10 15
 Ser Gly Phe Ile Gly Lys Asn Leu Ala Gln Tyr Leu Ser Gln Lys Tyr
 20 25 30
 His Val His Val Phe Asp Lys Tyr Ile Asp Gln Pro Phe Phe Thr Ser
 35 40 45
 Tyr Pro Ser Ile Glu Thr Thr Glu Leu Asp Leu Val Ser Gln Arg Ile
 50 55 60
 Pro Gln Asp Met Pro Ser Pro Asp Tyr Ile Ile Asn Leu Ala Ser Val
 65 70 75 80
 Val Thr Ala Glu Arg Asn Met Ser Leu Phe Asp Glu Leu Ile Ser Ser
 85 90 95
 Asn Leu Lys Ile Leu Leu Asn Leu Tyr Glu Arg Phe Lys Glu Glu Ser
 100 105 110
 Ser Leu Lys Leu Phe Ile Gln Phe Gly Ser Ser Glu Glu Tyr Gly Ser
 115 120 125

Glu Gln Ser Pro Phe Arg Glu Glu Asp Arg Glu Cys Pro Asn Ser Pro
 130 135 140
 Tyr Ala Leu Val Lys Gln Leu Thr Thr Asn Thr Ser Met Met Leu Tyr
 145 150 155 160
 Arg Asn Tyr Gly Phe Pro Ile Met Val Val Arg Pro Gly Asn Leu Phe
 165 170 175
 Gly Pro Leu Gln Asn Lys Asp Lys Phe Ile Pro Tyr Val Val Gly Gln
 180 185 190
 Leu Arg Ser Gly Leu Pro Leu Asn Val Ser Pro Cys Glu Gln Lys Arg
 195 200 205
 Asp Phe Ile Tyr Val Asp Asp Phe Ser Cys Ala Ile Glu Ser Leu Leu
 210 215 220
 Gln Asn Tyr Phe Lys Cys Leu Gly Glu Ile Val Asn Val Ser Ser Gly
 225 230 235 240
 Glu Ser Ile Ser Leu Lys Gln Ile Ile Glu His Cys Lys Ala Ser Leu
 245 250 255
 His Ser Ser Ser Asp Val Asn Tyr Gly Ala Leu Pro Tyr Arg Glu Asn
 260 265 270
 Glu Ala Met Asp Leu Lys Cys Ser Ile Ala Lys Leu Ser Ser Ile Thr
 275 280 285
 Gly Cys Asn Ile His Phe Asp Asn Glu Lys Arg Leu Thr Asp Tyr Leu
 290 295 300
 Lys Gln
 305

<210> 9995

<211> 86

<212> PRT

<213> B.fragilis

<400> 9995

Glu Thr Lys Tyr Ser Phe Gly Arg Gly Ala Thr Val Thr Ser Phe His
 1 5 10 15
 Ile Ala Ser Gly Arg Gly Gln Lys Lys Thr Tyr Leu Trp Gly Arg Phe
 20 25 30
 Arg Pro Gln Asp Ile Thr Phe Asp Pro Ile Arg Gly Asp Gln Gln Leu
 35 40 45
 Ala Tyr Pro Pro Ile Arg Phe Ile Gly Thr Arg Thr Ser Asp Thr Thr
 50 55 60
 Pro Ala Asp Lys Lys Ala His His Thr Arg Arg Val Asn Ala Thr Ile
 65 70 75 80
 Glu Leu Leu Asp Arg Ala
 85

<210> 9996

<211> 81

<212> PRT

<213> B.fragilis

<400> 9996

Val Ser Arg Lys Arg Ser Phe Pro Arg Tyr Phe Cys Thr Arg Arg Ile
 1 5 10 15
 Arg Pro Pro Val Trp Val Phe Ser Pro Val Ser Thr Ile Glu Thr Phe
 20 25 30
 Gln His Ser Glu Trp Leu Phe Thr Met Val Val Val Leu Leu Glu Arg
 35 40 45
 His Thr Ala Ile Ser Val Leu Arg Lys Lys Val Gly Glu Thr Leu
 50 55 60
 Leu Asp Glu Lys Trp Gly Leu Ala Ala Thr Phe Ser Lys Arg Gly Gly

65
Trp

70

75

80

<210> 9997
<211> 69
<212> PRT
<213> B.fragilis

<220>
<221> UNSURE
<222> (19)
<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9997
Pro Thr Phe Phe Phe Gly Ala Gly Trp Ile Thr Glu Glu Arg Arg Gly
1 5 10 15
Val Gly Xaa Thr Ala Asp Val Ile Asn Asn Arg Ser Leu Ile Phe Phe
20 25 30
Pro Ile Asp Gly Met Leu Tyr Trp Ile Ser Gly Ile Cys Leu Pro Ser
35 40 45
Pro Ser Lys Arg Glu Ile Gly Gly Phe Val Ala Lys Leu Asp Gln Val
50 55 60
Thr Arg Leu Leu His
65

<210> 9998
<211> 285
<212> PRT
<213> B.fragilis

<400> 9998
Phe Phe Gly Glu Gly Ser Pro Pro Pro Lys Arg Ser Pro Lys Ile Ile
1 5 10 15
Asp Cys Pro Glu Lys Arg Asn Lys Gly Lys Lys Ala Pro Pro Arg Val
20 25 30
Thr Ser Thr Arg Pro Pro Pro Gln Asn Met Trp Trp Trp Val Ile Lys
35 40 45
Thr Thr Lys Lys Phe Ser Phe Gly Glu Asn Thr Phe Ser Cys Ser His
50 55 60
Phe Phe Lys Lys Ala Ile His His Pro Pro Leu Leu Glu Asn Val Ala
65 70 75 80
Ala Arg Pro His Phe Ser Ser Arg Ser Val Ser Pro Thr Phe Phe Arg
85 90 95
Asn Asn Thr Glu Met Ala Val Cys Leu Ser Ser Asn Thr Thr Thr Ile
100 105 110
Val Asn Asn His Ser Glu Cys Trp Lys Val Ser Met Val Asp Thr Gly
115 120 125
Leu Asn Thr Gln Thr Gly Gly Arg Ile Arg Arg Val Gln Lys Tyr Leu
130 135 140
Gly Asn Glu Arg Phe Leu Leu Thr Tyr Gly Asp Gly Val Thr Asp Leu
145 150 155 160
Asn Ile Gly Asp Thr Leu Lys Ala His Glu Ser Ser Asp Cys Leu Leu
165 170 175
Ser Leu Thr Ala Tyr Lys Pro Gly Gly Lys Phe Gly Ala Leu Gln Leu
180 185 190
Asp Leu Asp Thr Asp Lys Val Leu Ser Phe Gln Glu Lys Pro Asp Gly
195 200 205
Asp Arg Asn Trp Ile Asn Ala Gly Tyr Phe Val Cys Glu Pro Glu Val

210		215		220
Phe Asp Tyr Ile Pro Glu Gly Asp Ser Thr Ile Phe Glu Arg Gln Pro				
225		230		240
Leu Glu Ser Ile Ala Lys Ala Gly Arg Met His Ala Phe Arg His Thr				
	245		250	255
Gly Phe Trp Lys Pro Met Asp Thr Leu Arg Asp Asn Thr Glu Leu Asn				
	260		265	270
Glu Met Trp Asp Gln Gly Val Ala Pro Trp Lys Val Trp				
	275		280	285

<210> 9999

<211> 845

<212> PRT

<213> B.fragilis

<400> 9999

Cys Arg Gln Pro Ile Arg Phe Arg Gln Leu Ile Arg Arg Ile Ser Asn				
1	5	10	15	
Leu Leu Arg Ser Leu Lys Asp Ala Ser Ala Thr Ala Ile Tyr Gly Ser				
	20	25	30	
Arg Gly Ala Asn Gly Val Val Leu Ile Thr Thr Lys Arg Gly Ala Lys				
	35	40	45	
Gly Lys Asp Asn Ile Ser Phe Ser Ala Asn Phe Gly Ile Ser Lys Val				
	50	55	60	
Val Lys Lys Leu Asp Met Leu Asp Gly Tyr Ala Tyr Ala Met Tyr Arg				
65	70	75	80	
Asn Glu Ala Ala Gln Met Phe Asn Glu Tyr Glu Asn Ala Asn Glu Ala				
	85	90	95	
Ile Pro Tyr Pro Gly Thr Ser Lys Val Asp Pro Ser Thr Gly Glu Ser				
	100	105	110	
Val Tyr Ser Pro Gly Pro Glu Asp Tyr Arg Asn Gly Thr Tyr Pro Ser				
	115	120	125	
Val Asn Trp Gln Asp Glu Val Phe Glu Thr Ala Phe Ser Gln Glu Tyr				
	130	135	140	
Asn Leu Ser Val Asn Gly Ser Asn Asp Lys Gly Tyr Tyr Ala Ile Ser				
145	150	155	160	
Gly Asn Ile Leu Asp Gln Ser Gly Ile Ile His Asn Ser Gly Tyr Lys				
	165	170	175	
Arg Tyr Ser Phe Arg Ala Asn Leu Ala Arg Lys Val His Glu Trp Ile				
	180	185	190	
Glu Ile Gly Thr Asn Met Ser Phe Thr Asn Ser Leu Asn Lys Leu Ala				
	195	200	205	
Lys Thr Asn Ser Val Ser Asp Gly Ile Ile Arg Gly Ala Leu Phe Tyr				
	210	215	220	
Pro Ala Thr Ala Pro Leu Asp Asp Glu Thr Asn Asn Ala Gln Leu Asn				
225	230	235	240	
Trp Phe Ser Ser Asn Pro Tyr Val Tyr Thr Arg Ala Ala Lys Asp Glu				
	245	250	255	
Leu Thr Thr Asn Ser Phe Phe Ser Ser Ser Phe Val Glu Ile Thr Pro				
	260	265	270	
Tyr Lys Asp Leu Lys Val Arg Gln Asn Val Gly Phe Ser Tyr Asn Ile				
	275	280	285	
Asn Glu Arg Asp Val Tyr Tyr Asn Arg Glu Thr Val Glu Gly Lys Asp				
	290	295	300	
Pro Thr Asn Gly Tyr Ala Ser Lys Ala Asp Asn Trp Ser Lys Asn Leu				
305	310	315	320	
Val Leu Glu Thr Met Ala Thr Tyr Asn Lys Thr Phe Asn Arg Asn His				
	325	330	335	
Ser Leu Asn Val Val Ala Ala Phe Ser Tyr Glu Arg Gly Asp Tyr Gly				

			340				345				350				
Asn	Lys	Ala	Met	Val	Ala	Thr	Gly	Phe	Pro	Gln	Asp	Leu	Thr	Glu	Asp
		355					360					365			
Phe	Asp	Met	Ser	Ala	Ala	Val	Asn	Pro	Gln	Lys	Pro	Thr	Ser	Gly	Arg
		370					375					380			
Gly	Met	Thr	Ser	Leu	Val	Ser	Phe	Leu	Gly	Arg	Ala	Asn	Tyr	Asn	Leu
385					390					395					400
Met	Asn	Lys	Tyr	Leu	Phe	Thr	Ala	Ser	Phe	Arg	Arg	Asp	Gly	Ser	Ser
				405					410					415	
Lys	Tyr	Ala	Pro	Gly	Asn	Lys	Trp	Ser	Asn	Phe	Ala	Ser	Gly	Ala	Ile
		420						425					430		
Ala	Trp	Arg	Ala	Ser	Glu	Glu	Gln	Phe	Ile	Lys	Asp	Leu	Asn	Val	Phe
		435					440					445			
Ser	Asn	Leu	Lys	Phe	Arg	Ala	Ser	Tyr	Gly	Gln	Thr	Gly	Asn	Gln	Ala
	450					455					460				
Ile	Gly	Ala	Tyr	Ala	Thr	Arg	Asp	Tyr	Leu	Thr	Val	Ala	Asn	Tyr	Pro
465					470					475					480
Ile	Asn	Gly	Ala	Leu	Ala	Ser	Gly	Phe	Ala	Asn	Leu	Thr	Trp	Arg	Gly
				485				490						495	
Pro	Ala	Asn	Pro	Asp	Leu	Lys	Trp	Glu	Thr	Thr	Ser	Gln	Tyr	Asn	Val
		500						505					510		
Gly	Val	Asp	Met	Gly	Phe	Phe	Gln	Asn	Arg	Ile	Asn	Leu	Thr	Ile	Asp
		515					520					525			
Leu	Tyr	Tyr	Lys	Lys	Thr	Ser	Asp	Leu	Leu	Gln	Asn	Ile	Gln	Ile	Pro
	530					535					540				
Gln	Ser	Thr	Gly	Phe	Ser	Asn	Met	Thr	Thr	Asn	Phe	Gly	Asn	Val	Thr
545					550					555					560
Asn	Lys	Gly	Leu	Glu	Ile	Thr	Gly	Lys	Phe	Tyr	Ala	Ile	Thr	Gly	Lys
				565					570					575	
Asn	Leu	Asn	Trp	Asp	Phe	Asp	Ala	Asn	Ile	Ser	Phe	Asn	Arg	Asn	Lys
		580						585					590		
Ile	Ser	Gly	Leu	Pro	Gly	Asp	Gln	Phe	Ala	Gln	Gly	Trp	Ser	Lys	Ala
		595					600					605			
Asp	Asn	Val	Phe	Leu	Gln	Arg	Asn	Gly	Met	Pro	Ile	Gly	Thr	Ile	Tyr
	610					615					620				
Gly	Phe	Val	Glu	Asp	Gly	Leu	Tyr	Asp	Asn	Ile	Val	Glu	Val	Arg	Ala
625					630					635					640
Asp	Pro	Phe	Tyr	Ala	Lys	Glu	Ser	Glu	Ala	Val	Cys	Lys	Ala	Met	Val
				645					650					655	
Gly	Glu	Val	Lys	Tyr	Lys	Asp	Phe	Asp	Gly	Val	Ala	Gly	Ile	Thr	Asn
		660						665					670		
Ala	Asp	Arg	Gln	Val	Ile	Gly	Glu	Thr	Asn	Pro	Asp	Phe	Thr	Phe	Gly
		675					680					685			
Met	Thr	His	Asn	Phe	Thr	Tyr	Lys	Asn	Phe	Ser	Leu	Ser	Phe	Phe	Leu
	690					695					700				
Gln	Gly	Cys	Val	Gly	Gly	Asp	Ile	Phe	Asn	Ala	Asn	Leu	Leu	Glu	Val
705					710					715					720
Thr	Met	Ser	Gly	Ile	Gly	Asn	Ile	Pro	Gln	Asn	Ile	Tyr	Glu	Ser	Arg
				725					730					735	
Trp	Thr	Pro	Glu	Asn	Arg	Glu	Asn	Ala	Lys	Trp	Pro	Lys	Ala	Tyr	Ala
		740						745					750		
Gly	Tyr	Gly	Arg	Thr	Met	Lys	Leu	Ser	Asp	Arg	Tyr	Val	Glu	Asp	Gly
		755					760					765			
Ser	Tyr	Leu	Arg	Met	Lys	Asn	Ile	Asn	Leu	Gly	Tyr	Lys	Phe	Ile	Ser
	770					775					780				
Pro	Phe	Lys	Gly	Ile	Glu	Ser	Ile	Asn	Leu	Phe	Ala	Ser	Val	Ser	Asn
785					790					795					800
Val	Phe	Thr	Ile	Ser	Gly	Tyr	Ser	Trp	Tyr	Asp	Pro	Asp	Val	Asn	Ser
				805					810					815	

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Phe Gly Ser Asp Ala Ser Arg Arg Gly Val Asp Leu Phe Ser Tyr Pro
 820 825 830
 Ser Ser Arg Thr Phe Ser Phe Gly Leu Gln Cys Thr Phe
 835 840 845

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 <211> 264
 <212> PRT
 <213> B.fragilis

<400> 10000
 Met Thr Pro Ile Ala Pro Leu Pro Met Ile Pro Trp Asn Met Gln Asn
 1 5 10 15
 Met Met Met Leu Leu Met Ala Leu Leu Met Ser Gly His Met Met Ala
 20 25 30
 Gln Gln Thr Ile Val Thr Gly Val Ile Thr Asp Ala Asn Asp Gly Ser
 35 40 45
 Ser Leu Ile Gly Ala Asn Val Leu Val Lys Gly Ala Gly Thr Gly Ser
 50 55 60
 Ile Ala Asn Val Asp Gly Lys Tyr Ser Val Asn Val Pro Asn Gly Lys
 65 70 75 80
 Asn Val Leu Val Phe Ser Cys Val Gly Tyr Lys Glu His Glu Ile Thr
 85 90 95
 Leu Lys Pro Gly Gln Lys Val Leu Asn Val Ile Met Lys Glu Asp Thr
 100 105 110
 Glu Leu Leu Asp Glu Val Val Val Ile Gly Tyr Gly Ser Met Lys Lys
 115 120 125
 Ser Asp Leu Thr Gly Ser Val Thr Ser Ile Lys Ser Glu Asp Leu Met
 130 135 140
 Lys Thr Asn Pro Ile Ser Ile Asn Gln Gly Leu Gln Gly Arg Ile Ala
 145 150 155 160
 Gly Val Gln Val Asn Gln Asn Asp Gly Ala Pro Gly Ala Gly Val Ser
 165 170 175
 Ile Gln Ile Arg Gly Ala Asn Ser Phe Ser Thr Ser Thr Glu Pro Leu
 180 185 190
 Tyr Ile Val Asp Gly Ile Pro Phe Thr Ser Ser Gly Met Pro Gly Thr
 195 200 205
 Gly Lys Asp Gly Met Met Gln Thr Ala Asn Pro Leu Ser Thr Ile Asn
 210 215 220
 Pro Ser Asp Ile Glu Ser Ile Glu Ile Phe Glu Arg Cys Leu Cys His
 225 230 235 240
 Ser His Leu Trp Ile Ala Trp Arg Lys Trp Cys Gly Ile Asp Tyr Tyr
 245 250 255
 Gln Thr Trp Cys Lys Arg Lys Arg
 260

<210> 10001
 <211> 419
 <212> PRT
 <213> B.fragilis

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 Gln Lys Ser Ser Thr Ser Pro Cys Ala Leu Lys Gly Glu Ser Leu Leu
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 Ala Gln Gln Ile Ala Leu Glu Ile Ser Lys Leu Leu Arg His Arg Gln
 20 25 30
 Thr Phe Leu Phe Ala Phe His Lys Ser Pro Glu Leu Ser Arg Tyr Phe
 35 40 45
 Asp Leu Gly Thr Asn Asp Ala Leu His Arg Leu Gln Glu Phe Gly Arg

50 55 60
 Met Gly Arg Phe Glu Glu Tyr Ala Cys Leu Thr Arg Leu Gln Ala Phe
 65 70 75 80
 Leu Gln Cys Thr Val Thr Ala Cys Ser Met Arg Ile Glu Gln Ile Thr
 85 90 95
 Arg Leu Leu Pro Ala Arg Phe His Ala Phe Thr Asn Leu Leu Val Gly
 100 105 110
 Val Arg Arg Ser Gly Tyr Leu Gly Ser Asp Gly Cys Met Arg Thr Ala
 115 120 125
 Ile Gln Val Glu His Thr Gly Lys Val Ala Arg Ile Thr His Ile His
 130 135 140
 Arg Ile Gly Asn Gly Gly Asn Gly Arg Thr Gly Ile Val Leu Ser Cys
 145 150 155 160
 Leu Gln Ile Leu Ile Glu Asn Ile Ile Leu Ile Val Gly Gly Asp Lys
 165 170 175
 Thr Ala Asp Gly Gln Ala His Leu Phe Ala Glu Gln Ala Cys Ser Asn
 180 185 190
 Val Thr Lys Val Ser Ala Arg His Thr Asp Asp Asp Ile Leu Cys Pro
 195 200 205
 Ala Gly Leu Leu Gln Leu Arg Ile Gly Ile Lys Ile Ile Glu Cys Leu
 210 215 220
 Arg Gln Glu Thr Cys His Val Asp Arg Val Ser Arg Gly Gln Gln Gln
 225 230 235 240
 Leu Phe Val Gln Phe Leu Ile His Lys Gly Cys Phe His Gln Arg Leu
 245 250 255
 Ala Val Ile Lys Arg Ser Val His Leu Glu Gly Cys Asn Ile Pro Pro
 260 265 270
 Gln Arg Ser Glu Leu Phe Phe Leu Tyr Leu Ala Asp Phe Ser Leu Arg
 275 280 285
 Ile Glu His Ile His Met Asn Thr Leu Tyr Pro Gln Lys Ala Ile Gly
 290 295 300
 Tyr Arg Thr Thr Gly Ile Ser Gly Ser Gly Asn Glu His Ile His Leu
 305 310 315 320
 Phe Pro Pro Leu Phe Pro Asp Glu Val Ser Gln Gln Thr Gly His Lys
 325 330 335
 Pro Ser Thr Tyr Ile Phe Lys Ser Gln Cys Arg Thr Val Glu Lys Leu
 340 345 350
 Gln Gly Ile Asp Val Leu Leu His Arg His Gln Arg Asp Ile Lys Ile
 355 360 365
 Gln Arg Ile Ile Asn Asp Leu Phe Gln Arg Phe Arg Arg Asn Ile Phe
 370 375 380
 Ser Lys Glu Ser Ile Cys His Pro Val Ser Asp Phe Pro Glu Arg Lys
 385 390 395 400
 Ile Leu Tyr Leu Val Ile Lys Leu Leu Arg Gln Gly Leu Asp Gly His
 405 410 415
 Gly His Glu

<210> 10002

<211> 270

<212> PRT

<213> B.fragilis

<400> 10002

Val Ala Thr Pro Pro Thr Val Thr Ser Ser Ser Asn Ser Ser Arg Phe
 1 5 10 15
 Thr Pro Ile Thr Ser Ile Asp Ile Trp Gln Ala Ile Asn Ser Thr Pro
 20 25 30
 Phe Ser Arg Ala Cys Cys Arg Arg Asp Ser Ser Glu Ser Met Pro Phe

35 40 45
 Arg Cys Met Met Tyr Arg Ile Ile Phe Pro Pro Ile Pro Pro Met Leu
 50 55 60
 Ile Leu Glu Ser Phe Ser Phe Ser Glu Leu Asp Gly Ser Ile Val Pro
 65 70 75 80
 Asn Ile Leu Pro Lys Met Ser Phe Ser Thr Leu Gly Leu Cys Asn Phe
 85 90 95
 Leu Ile Thr Phe Ser Pro Gln Lys Val Lys Lys Ile Val Thr Phe Cys
 100 105 110
 Pro Val Ala Ala Ala Pro Leu Ala Arg Thr Lys Val Ala Ser Ala Leu
 115 120 125
 Ser Lys Ser Ser Leu Asn Ile Ile Arg Val Leu Pro Leu Leu Ser His
 130 135 140
 Val Val Val Arg Leu Gln Ala Trp Gly Ser Pro Phe Ser Met Thr Thr
 145 150 155 160
 Thr Asp Phe Pro Pro Val Leu Ser Leu Glu Ile Asn Leu Phe Pro Val
 165 170 175
 Glu Leu His His Ala Ala Ala Ser Arg Glu Asn Pro Gly Ser Val Ala
 180 185 190
 Thr Ile Ser Thr Leu Ser Pro Gly Thr Ser Val Ser Ile Val Phe Phe
 195 200 205
 Ile Phe Arg Thr Gly Pro Gly His Cys Asn Pro Gln Ala Ser Thr Arg
 210 215 220
 Ile Val Leu Gly Phe Ala Ala Val Val Val Trp Gly Ala Ser Ala Val
 225 230 235 240
 Thr Glu Gly Phe Ala Gly Leu Ser Cys Ala Glu Gly Val Ser Ser Val
 245 250 255
 Ser Ser Phe Ser Cys Lys Met Met Gly Ala Val Ala Ala Arg
 260 265 270

<210> 10003

<211> 321

<212> PRT

<213> B.fragilis

<400> 10003

Lys Asn Asn Pro Arg Met Met Lys Asn Lys Lys Val Glu Ala Asn Leu
 1 5 10 15
 Ser Met Val Val Ser Lys Thr Phe Ser Gly Leu Asn Met Asn Ala Leu
 20 25 30
 Lys Tyr Leu Leu Pro Val Trp Val Ser Pro Leu Ser Gly Val Thr Leu
 35 40 45
 Arg Cys Val Phe Ala Ala Ile Ala Phe Trp Ile Ile Gly Met Phe Val
 50 55 60
 Lys Pro Glu Ile Ser Thr Arg Lys Glu Lys Ile Phe Leu Phe Leu Leu
 65 70 75 80
 Gly Ala Leu Gly Ile Tyr Gly Phe Met Phe Leu Tyr Leu Met Gly Leu
 85 90 95
 Ser Lys Thr Thr Pro Val Ser Ser Ser Ile Phe Thr Ser Leu Gln Pro
 100 105 110
 Ile Trp Val Phe Val Ile Ala Val Val Phe Phe Lys Glu Lys Ile Ser
 115 120 125
 Ala Met Lys Ile Ala Gly Ile Ser Leu Gly Leu Gly Gly Ala Ile Leu
 130 135 140
 Cys Ile Leu Ala Gln Lys Ser Asp Asp Leu Ala Ser Asp Ala Leu Thr
 145 150 155 160
 Gly Asn Met Leu Cys Leu Leu Ser Ser Ile Ala Tyr Ala Val Tyr Leu
 165 170 175
 Val Ala Ser Asn Arg Ile Leu Lys Ser Val Gly Met Phe Thr Val Leu

			180					185				190			
Lys	Tyr	Thr	Phe	Ala	Gly	Ala	Ala	Phe	Ser	Ser	Ile	Val	Val	Ser	Ala
			195				200					205			
Val	Thr	Gly	Phe	His	Ala	Pro	Val	Phe	Ser	Gly	Pro	Leu	His	Trp	Phe
		210				215					220				
Pro	Leu	Ser	Val	Leu	Leu	Phe	Val	Leu	Ile	Phe	Pro	Thr	Val	Val	Ser
225					230					235					240
Tyr	Leu	Leu	Val	Pro	Ile	Gly	Leu	Lys	Tyr	Leu	Lys	Thr	Thr	Val	Val
			245						250					255	
Ala	Ile	Tyr	Gly	Tyr	Leu	Ile	Leu	Ile	Val	Ala	Thr	Ile	Val	Ser	Leu
			260					265					270		
Leu	Val	Gly	Gln	Asp	Arg	Phe	Ser	Trp	Ser	Gln	Thr	Ile	Ala	Ile	Gly
		275					280					285			
Met	Ile	Cys	Val	Ser	Val	Tyr	Leu	Val	Glu	Val	Ala	Glu	Thr	Lys	Glu
	290					295					300				
Lys	Pro	Val	Ser	Asn	Ser	Asp	Lys	Pro	Ser	Ser	Leu	Pro	Pro	His	Gly
305					310					315					320
Ser															

<210> 10004

<211> 312

<212> PRT

<213> B.fragilis

<400> 10004

Leu	Leu	Asn	Thr	Tyr	Ala	Ile	Met	Pro	Leu	Asn	Leu	Pro	Asp	Lys	Leu
1				5					10					15	
Pro	Ala	Ile	Glu	Leu	Leu	Lys	Glu	Glu	Asn	Ile	Phe	Val	Ile	Asp	Asn
			20					25					30		
Ser	Arg	Ala	Thr	Gln	Gln	Asp	Ile	Arg	Pro	Leu	Arg	Ile	Val	Ile	Leu
		35				40						45			
Asn	Leu	Met	Pro	Leu	Lys	Ile	Thr	Thr	Glu	Thr	Asp	Leu	Val	Arg	Leu
	50				55					60					
Leu	Ser	Asn	Thr	Pro	Leu	Gln	Val	Glu	Ile	Ser	Phe	Met	Lys	Ile	Lys
65					70					75				80	
Ser	His	Thr	Ser	Lys	Asn	Thr	Pro	Ile	Glu	His	Met	Lys	Thr	Phe	Tyr
			85						90					95	
Thr	Asp	Phe	Asp	Lys	Met	Arg	Glu	Asp	Arg	Tyr	Asp	Gly	Met	Ile	Ile
			100					105					110		
Thr	Gly	Ala	Pro	Val	Glu	Gln	Met	Asp	Phe	Glu	Glu	Val	Asn	Tyr	Trp
		115					120					125			
Asp	Glu	Ile	Thr	Glu	Ile	Phe	Asp	Trp	Ala	Arg	Thr	His	Val	Thr	Ser
	130					135					140				
Thr	Leu	Tyr	Ile	Cys	Trp	Ala	Ala	Gln	Ala	Gly	Leu	Tyr	His	His	Tyr
145					150					155					160
Gly	Ile	Pro	Lys	Tyr	Ala	Leu	Asp	Lys	Lys	Met	Phe	Gly	Ile	Phe	Lys
			165					170						175	
His	Arg	Thr	Leu	Leu	Pro	Leu	His	Pro	Ile	Phe	Arg	Gly	Phe	Asp	Asp
		180						185					190		
Glu	Phe	Tyr	Val	Pro	His	Ser	Arg	His	Thr	Glu	Val	Arg	Lys	Glu	Asp
		195					200					205			
Ile	Leu	Lys	Val	Pro	Glu	Leu	Thr	Leu	Leu	Ser	Glu	Ser	Asp	Asp	Ser
	210					215					220				
Gly	Val	Tyr	Met	Val	Val	Ala	Arg	Gly	Gly	Arg	Glu	Phe	Phe	Val	Thr
225					230					235					240
Gly	His	Ser	Glu	Tyr	Ser	Pro	Leu	Thr	Leu	Asp	Thr	Glu	Tyr	Arg	Arg
			245						250					255	
Asp	Val	Ser	Lys	Gly	Leu	Pro	Ile	Glu	Ile	Pro	Arg	Asn	Tyr	Tyr	Val

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<213> B.fragilis

<400> 10007

Asn	Leu	Lys	Thr	Ile	Thr	Val	Met	Glu	Lys	Tyr	Leu	Ile	His	Ser	Asn
1				5					10					15	
Glu	Leu	His	Leu	Ile	Asp	Gln	Glu	Arg	Ile	His	Gln	Ala	Val	Glu	Gln
			20					25					30		
Met	Val	Glu	Ser	Leu	Asp	Met	Ala	Ala	Gly	Ser	Thr	Phe	Ser	Phe	Asp
			35				40					45			
Leu	Tyr	Lys	Val	Val	Glu	Thr	Tyr	Phe	Lys	Asp	Leu	Asp	Lys	Arg	Arg
	50					55					60				
Glu	Ile	Asn	His	Leu	Leu	Gly	Ile	Thr	Asp	Asn	Thr	Tyr	Asp	Pro	Thr
65					70					75					80
Glu	Asp	Phe	Gly	Val	Cys										
					85										

<210> 10008

<211> 642

<212> PRT

<213> B.fragilis

<400> 10008

Leu	His	Glu	Thr	Ile	Lys	Met	Leu	Arg	Ile	Lys	Arg	Leu	Asp	Ile	Phe
1				5					10					15	
Ile	Ile	Lys	Ser	Phe	Leu	Leu	Leu	Phe	Val	Gly	Thr	Phe	Phe	Ile	Cys
			20					25					30		
Leu	Phe	Ile	Phe	Met	Met	Gln	Phe	Leu	Trp	Lys	Tyr	Val	Asp	Glu	Leu
			35				40					45			
Val	Gly	Lys	Gly	Leu	Glu	Met	Ser	Val	Leu	Ala	Gln	Phe	Phe	Phe	Tyr
	50					55					60				
Ser	Ala	Leu	Ser	Leu	Val	Pro	Met	Ser	Leu	Pro	Leu	Ala	Val	Leu	Leu
65					70					75					80
Ala	Ser	Leu	Ile	Thr	Phe	Gly	Asn	Phe	Gly	Glu	Arg	Phe	Glu	Leu	Leu
				85					90					95	
Ala	Met	Lys	Ala	Ala	Gly	Ile	Ser	Leu	Leu	Lys	Ile	Met	Arg	Pro	Leu
			100					105					110		
Ile	Val	Leu	Val	Phe	Ala	Ile	Cys	Cys	Val	Ser	Phe	Tyr	Phe	Gln	Asn
		115					120					125			
Val	Ile	Gly	Pro	Gln	Ala	Gln	Ala	Lys	Leu	Gly	Thr	Leu	Leu	Ile	Ser
		130				135					140				
Met	Lys	Gln	Lys	Ser	Pro	Glu	Val	Asp	Ile	Pro	Glu	Gly	Val	Phe	Tyr
145					150					155					160
Asp	Glu	Ile	Asp	Gly	Tyr	Asn	Leu	Lys	Val	Gln	Arg	Lys	Asp	Arg	Lys
				165					170					175	
Thr	Gly	Met	Leu	Tyr	Asp	Val	Ile	Ile	Tyr	Asp	Phe	Ser	Asn	Asn	Phe
			180					185					190		
Asp	Asn	Ala	Arg	Ile	Ile	Val	Ala	Asp	Ser	Gly	Arg	Leu	Glu	Met	Thr
			195				200					205			
Ala	Asp	Lys	Gln	His	Leu	Tyr	Leu	His	Leu	Tyr	Ser	Gly	Glu	Met	Phe
			210			215					220				
Glu	Asn	Leu	Lys	Ala	Gln	Ser	Met	Ser	Ser	Lys	Asn	Val	Pro	Tyr	Arg
225					230					235					240
Arg	Glu	Ser	Phe	Arg	Glu	Lys	His	Ser	Ile	Ile	Gln	Phe	Asp	Ser	Asp
				245					250					255	
Phe	Asn	Met	Ala	Asp	Ala	Ser	Ile	Met	Ser	Asn	Gln	Ser	Thr	Thr	Lys
			260					265					270		
Asp	Met	Ile	Lys	Ile	Gln	Ala	Ser	Ile	Asp	Ser	Met	Thr	Val	Leu	Ala
			275				280					285			
Asp	Ser	Ile	Gly	Arg	Gln	Tyr	Phe	Val	Glu	Ala	Ser	Lys	Gly	Pro	Tyr

290 295 300
 Arg Thr Ala Val Gly Leu Thr Lys Glu Asp Thr Leu Lys Met Gln Glu
 305 310 315 320
 Ala Gln Ile Arg Asp Tyr Asn Val Asp Ser Leu Phe Glu Ala Ala Thr
 325 330 335
 Leu Met Asn Lys Gln Lys Ile Ile Ala Ser Ala Val Gly Arg Thr Glu
 340 345 350
 Asn Leu Ser Ser Asp Trp Gly Phe Lys Ser Phe Thr Met Thr Gln Asn
 355 360 365
 Asp Phe Ser Ile Arg Lys His Lys Ile Glu Trp His Arg Lys Ile Thr
 370 375 380
 Ile Ser Leu Ser Cys Leu Leu Phe Phe Phe Ile Gly Ala Pro Leu Gly
 385 390 395 400
 Gly Ile Ile Arg Lys Gly Gly Leu Gly Met Pro Val Ile Val Ser Val
 405 410 415
 Leu Thr Phe Ile Ile Tyr Tyr Ile Ile Asp Asn Thr Gly Tyr Lys Met
 420 425 430
 Ala Arg Asp Gly Lys Trp Ile Val Trp Met Gly Met Trp Met Ser Ser
 435 440 445
 Ala Ile Leu Ala Pro Leu Gly Tyr Phe Leu Thr Tyr Lys Ser Asn Lys
 450 455 460
 Asp Ser Val Val Leu Asn Thr Asp Val Tyr Ile Ser Trp Phe Lys Arg
 465 470 475 480
 Val Phe Gly Val Arg Ser Val Arg His Leu Ser Lys Lys Glu Val Ile
 485 490 495
 Ile His Asp Pro Asp Tyr Gln Arg Leu Pro Phe Asp Leu Asn Gly Leu
 500 505 510
 Ser Glu Glu Cys Arg Ala Tyr Met Gln Lys Asn Arg Leu Ala Lys Ala
 515 520 525
 Pro Asn Tyr Phe Ser Leu Trp Met Ser Gly Gly Gln Asp Gln Glu Ile
 530 535 540
 Ile Ala Ile Asn Asn Arg Met Glu Ala Leu Val Asp Glu Met Ser Asn
 545 550 555 560
 Thr Arg Ser Leu Ile Leu Leu Gln Lys Leu Glu Lys Tyr Pro Ile Ile
 565 570 575
 Pro Val Asn Ala His Val Arg Pro Phe His Asn Tyr Trp Leu Asn Met
 580 585 590
 Ala Ile Gly Ile Val Ile Pro Ile Gly Leu Phe Phe Tyr Phe Arg Ile
 595 600 605
 Trp Ala Phe Arg Ile Arg Leu Asn Lys Asp Met Glu Arg Ile Ile Ala
 610 615 620
 Leu Asn Arg Asp Val Glu Leu Thr Ile Lys Asp Ile Asn Asn Glu Asn
 625 630 635 640
 Lys Ile

<210> 10009

<211> 61

<212> PRT

<213> B.fragilis

<400> 10009

Trp Phe Ser Ala Thr Thr Gln Met Ile Gly Leu Leu Lys Asn Lys Ile
 1 5 10 15
 Pro Asn Gly Met Ser Phe Glu Leu Leu Phe Met Thr Gln Arg Pro Ile
 20 25 30
 Ile Phe Pro Thr Pro Phe Leu Ile Ala Gln Lys Arg Phe Leu Thr Gly
 35 40 45
 Lys Glu Ser Ser Glu Gln Ala Ser Ala Thr Phe Ser Phe

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55

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<210> 10010
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 10010
 Lys Leu Tyr Phe Cys Thr Tyr Lys Leu Val Leu Ile Ile Lys Ile Ser
 1 5 10 15
 Asn Lys Met Ala Tyr Val Ile Ser Glu Asp Cys Ile Ala Cys Gly Thr
 20 25 30
 Cys Ile Asp Glu Cys Pro Val Gly Ala Ile Ser Glu Gly Asp Ile Tyr
 35 40 45
 Ser Ile Asp Pro Glu Gln Cys Thr Asp Cys Gly Thr Cys Ala Asp Val
 50 55 60
 Cys Pro Ser Glu Ala Ile His Pro Ala Glu
 65 70

<210> 10011
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 10011
 Asn Ile Glu Ala Asp Ile Leu Phe Phe Ile Thr Leu Leu Ser Cys Tyr
 1 5 10 15
 Ser Tyr Lys Leu Lys Cys Ser Ala Ile Val Leu Asn Ala Cys Thr Gly
 20 25 30
 Lys Lys Asp Lys Ala Ala Thr Met Lys Met Thr Ala Lys Val Ile Thr
 35 40 45
 Ala Lys Val Thr Val Ser Val Phe Lys Val Pro Ala Leu Ser Gly Ile
 50 55 60
 Asn Phe Phe
 65

<210> 10012
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 10012
 Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp

130		135		140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys				
145		150		155
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile				160
		165		170
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val				175
		180		185
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu				190
		195		200
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys				205
		210		215
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr				220
		225		230
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu				235
		245		250
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn				255
		260		265
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile				270
		275		280
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu				285
		290		295
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg				300
		305		310
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe				315
		325		330
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe				335
		340		345
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn				350
		355		360
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu				365
		370		375
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val				380
		385		390
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr				395
		405		410
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly				415
		420		425
				430

<210> 10013

<211> 867

<212> PRT

<213> B.fragilis

<400> 10013

Leu Asn Tyr Tyr Ser Ile Asp Arg Cys Arg Pro Cys Ser Gly Ala Ala				
1		5		10
Ser Ile Phe Leu Asp Lys Leu Leu Tyr Gly Asn Ser Tyr Phe Leu Ser				15
		20		25
Asp Gly Val Leu Ala Tyr Val Val Lys Gly Pro Leu Arg Ile Phe Asn				30
		35		40
Phe Lys Tyr Glu Pro Asp Ile Tyr Thr Gln Glu Ile Ser Gln Gln Ile				45
		50		55
Cys Val Tyr Met Lys Tyr Leu Phe Thr Leu Leu Met Ala Cys Leu Ser				60
		65		70
Leu Ser Thr Thr Tyr Gly Thr Val His His Pro Ser Ser Ser Val Ser				75
		85		90
Ser Gly Arg Trp Val Val Trp Ala Glu Lys Pro Ala Thr Ser Trp Gln				95
		100		105
Asp Ala Phe Val Thr Gly Asn Gly Arg His Gly Thr Met Val Met Gly				110

115	120	125
Gln Pro Gly Ser Glu Arg Ile	Ile Cys Val His Glu Glu Leu Phe Ile	
130	135	140
Arg Gly Trp Asp Arg His Lys Val Ala Val Pro Ser Thr Ala Ser Leu		
145	150	155
Leu Pro Glu Val Arg Arg Leu Ile Glu Ser Gly Arg Ser Asp Ala Ala		
165	170	175
Asp Glu Leu Met Thr Gly Glu Ala Asp Arg Gln Leu Val Ala Met Gly		
180	185	190
Ala Val Gln Arg Trp Pro Leu Ile Pro His Pro Ala Phe Asp Leu Cys		
195	200	205
Ile Arg Tyr Thr Asp Thr Thr Leu Gln Ala Glu Asn Gly Tyr Arg Arg		
210	215	220
Gln Leu Asp Leu Glu Thr Gly Glu Thr Ser Ala Phe Trp Gly Gly Arg		
225	230	235
Gly Gly Val Thr Glu Ser Val Phe Ser Ser Arg Glu His Asn Val Asn		
245	250	255
Val Leu Arg Leu Lys Ala Thr Gly Gln Arg Lys Ile Asn Leu Val Leu		
260	265	270
Gly Leu Lys Glu Thr Pro Gly Arg Glu Gly Val His Phe Glu His Asn		
275	280	285
Leu Asp Ser Ala Phe Ser Ser Val Ser Thr Glu Val Phe Ser Gly Trp		
290	295	300
Leu Ser Tyr Arg Ala Ala Tyr Lys Tyr Asp Ala Gly Gly Tyr Glu Gly		
305	310	315
Leu Ala Arg Val Ser Leu Lys Gly Gly Ser Met Ile Thr Glu Gly Asp		
325	330	335
Ser Leu Arg Ile Ala Asp Ala Asp Glu Val Leu Val Leu Val Arg Ile		
340	345	350
Thr Pro Leu Glu Asn Ala Asn Leu Ser Val Arg Pro Ser Val Gln Arg		
355	360	365
Glu Leu Ser Arg Leu Pro Leu Asp Tyr Asn Thr Leu Leu Leu Pro His		
370	375	380
Ser Arg Lys His Ala Glu Met Phe Arg Arg Met Gln Leu Asp Leu Gly		
385	390	395
Cys Ser Ser Asp Trp Lys Thr Thr Ser Thr Glu Lys Met Leu Ser Asp		
405	410	415
Ile His Lys His Gly Val Thr Pro Leu Phe Leu Glu Gln Ile His Ala		
420	425	430
Met Gly Arg Tyr Leu Leu Ile Ser Ser Ser Gly Lys Tyr Pro Pro Pro		
435	440	445
Leu Gln Gly Ile Trp Gly Gly Gly Trp Lys Pro Gly Trp Ile Gly Gly		
450	455	460
Phe Val Trp Asp Ser Asn Ile Asn Leu Ala Val Ser Ala Ala Ser Met		
465	470	475
Gly Asn Leu His Glu Cys Ala Glu Ser Tyr Ile Gly Tyr Val Glu Ser		
485	490	495
Leu Leu Pro Gly Trp Arg Leu Asn Ala Arg Asn Tyr Leu Gly Cys Arg		
500	505	510
Gly Phe Ile Val Ala His Tyr Asn Asp Pro Glu Ser Gly Tyr Leu Thr		
515	520	525
His Phe Gly Arg Ser Phe Pro Trp Met Cys Trp Pro Gly Gly Ala Gly		
530	535	540
Trp Asn Ile Arg Pro Phe Tyr Glu Tyr Ala Met Leu Thr Gly Asn Glu		
545	550	555
Ala Phe Leu Lys Lys His Val Phe Pro Leu Tyr Arg Glu Met Ala Asp		
565	570	575
Phe Tyr Glu Asp Tyr Leu Thr Met Asp Gly Asp Ser Leu Tyr His Ile		
580	585	590

Cys Pro Ser Val Ser Pro Glu Asn Ala Pro Pro Gly Thr Asp Thr Trp
 595 600 605
 Leu Ser Lys Asp Ala Thr Met Asp Val Ala Ile Ala Lys Glu Val Phe
 610 615 620
 Arg Leu Leu Leu Glu Met Gly Arg Thr Phe Arg Ala Asp Lys Lys Glu
 625 630 635 640
 Leu Ala Lys Trp Asn Asn Tyr Leu Gln Arg Leu Pro Ser Tyr Arg Ile
 645 650 655
 Asn Asp Glu Gly Ala Leu Ala Glu Trp Ile Asp Glu Ala Tyr Gln Asp
 660 665 670
 Val Tyr Asn His Arg His Leu Ser His Leu Tyr Pro Val Phe Pro Gly
 675 680 685
 Ser Gln Leu Gly Lys Ser Glu Gly Asp Pro Arg Leu Ile His Ala Ala
 690 695 700
 Arg Ile Ala Leu Asn Lys Arg Phe Ala Phe Asp Thr Gly Ser Ala His
 705 710 715 720
 Gly Leu Ile His Val Ala Leu Gln Ala Val Arg Leu Gly Asp Ile Asp
 725 730 735
 Lys Val Lys Thr Asn Leu Asp Arg Phe Ser Arg Arg His Tyr Leu Tyr
 740 745 750
 Asp Gly Leu Val Thr Ser His Asp Pro Glu His Gln Val Tyr Asn Leu
 755 760 765
 Asp Ala Val Leu Ser Ile Pro Arg Leu Leu Met Glu Met Leu Val Tyr
 770 775 780
 Thr Glu Lys Gly Lys Ile Glu Leu Leu Pro Ala Trp Pro Cys Asp Tyr
 785 790 795 800
 Ala Asp Gly Ser Ile Lys Gly Ile Lys Ile Tyr Gly Gly His Thr Leu
 805 810 815
 Asp Ile Thr Trp Lys Ala Gly Lys Leu Ile Glu Ala Val Leu Tyr Ala
 820 825 830
 Arg Gln Asn Glu Arg Tyr Glu Val Val Cys Gly Asp Val Arg Arg His
 835 840 845
 Val Gln Leu His Lys Gly Lys Thr Tyr His Phe Pro Ala Ser Phe Phe
 850 855 860
 Ala Glu Lys
 865

<210> 10014

<211> 216

<212> PRT

<213> B.fragilis

<400> 10014

Pro Lys His Tyr Lys Asp Met Lys Arg Leu Ile Pro Ile Leu Leu Ala
 1 5 10 15
 Val Phe Ala Phe Ala Ala Cys Glu Lys Asp Pro Asp Met Asp Lys Leu
 20 25 30
 Asp Asn Asp Tyr Leu Val Tyr Thr Asn Tyr Asp Lys Lys Ala Asp Phe
 35 40 45
 Lys Gln Phe Ser Thr Tyr Tyr Ile Pro Asp Ser Val Leu Val Ile Gly
 50 55 60
 Asp Lys Lys Asp Pro Glu Tyr Trp Lys Gly Glu Ala Ala Glu Ala Ile
 65 70 75 80
 Ile Asn Ala Tyr Lys Glu Asn Leu Asn Ser Lys Gly Phe Thr Tyr Thr
 85 90 95
 Asp Asn Lys Asp Ala Ala Asp Leu Gly Ile Gln Val Ser Tyr Val Gln
 100 105 110
 Ser Thr Tyr Tyr Phe Thr Asp Tyr Gly Gln Pro Glu Trp Trp Trp Asn
 115 120 125

Tyr Pro Gly Tyr Trp Asp Ala Pro Tyr Trp Gly Asn Trp Gly Gly Trp
 130 135 140
 Tyr Tyr Pro Tyr Val Val Asn Tyr Ser Ile Thr Thr Asn Ser Phe Leu
 145 150 155 160
 Thr Glu Ile Met Asn Leu Lys Ala Pro Glu Gly Glu Lys Gln Lys Leu
 165 170 175
 Pro Val Leu Trp Ser Ser Phe Leu Ser Gly Pro Ala Ser Tyr Ser Gly
 180 185 190
 Lys Val Asn Gln Thr Leu Val Val Arg Ala Ile Asn Gln Ser Phe Ala
 195 200 205
 Gln Ser Pro Tyr Leu Thr Asn Lys
 210 215

<210> 10015

<211> 389

<212> PRT

<213> B.fragilis

<400> 10015

Arg Tyr Cys Tyr Gly Leu Cys Ser Ile Lys Ile Glu Glu Lys Met Asp
 1 5 10 15
 Arg Glu Glu Ser Val Gln His Phe Leu Asp Leu Ile Lys Lys Ser Arg
 20 25 30
 Arg Gly Lys Phe Lys Val Tyr Ile Gly Met Ile Ala Gly Val Gly Lys
 35 40 45
 Ser Tyr Arg Met Leu Gln Glu Ala His Asp Leu Ile Asp Asn Gly Val
 50 55 60
 Asp Val Arg Ile Gly Tyr Ile Glu Thr His Gly Arg Ala Gly Thr Glu
 65 70 75 80
 Ala Leu Leu Lys Gly Leu Pro Val Ile Arg Arg Arg Lys Leu Phe Tyr
 85 90 95
 Lys Gly Lys Glu Leu Glu Glu Met Asp Leu Glu Ala Ile Ile Arg Ile
 100 105 110
 His Pro Glu Ile Val Ile Val Asp Glu Leu Ala His Thr Asn Val Glu
 115 120 125
 Gly Ser Leu Asn Glu Lys Arg Trp Gln Asp Val Met Thr Leu Leu Asp
 130 135 140
 Glu Gly Ile Asn Val Ile Ser Ala Val Asn Ile Gln His Ile Glu Ser
 145 150 155 160
 Val Asn Glu Glu Val Gln Asp Ile Ala Gly Ile Glu Val Lys Glu Arg
 165 170 175
 Ile Pro Asp Ser Val Leu Gln Glu Ala Asp Glu Val Val Asn Ile Asp
 180 185 190
 Leu Thr Ala Glu Glu Leu Ile Thr Arg Leu Lys Ala Gly Lys Ile Tyr
 195 200 205
 Lys Pro Glu Lys Ile Gln Thr Ala Leu Asn Asn Phe Phe Lys Thr Glu
 210 215 220
 Asn Ile Leu Gln Leu Arg Glu Leu Ala Leu Lys Glu Val Ala Leu Arg
 225 230 235 240
 Val Glu Lys Lys Val Glu Asn Glu Val Val Met Gly Ile Gly Leu Gly
 245 250 255
 Val Arg His Glu Lys Phe Met Ala Cys Ile Ser Ser Gln Glu Lys Thr
 260 265 270
 Pro Arg Arg Ile Ile Arg Lys Val Ala Arg Leu Ala Thr Arg Tyr Asn
 275 280 285
 Thr Ser Phe Val Ala Leu Tyr Val Gln Val Pro Lys Glu Ser Met Glu
 290 295 300
 Arg Ile Asp Leu Ala Ser Gln Arg His Leu Leu Asn His Phe Lys Leu
 305 310 315 320

Val Thr Glu Leu Gly Gly Glu Val Val Gln Val Gln Ser Lys Asp Ile
 325 330 335
 Leu Cys Ser Ile Val Gln Val Cys Lys Glu Lys Gln Ile Ser Thr Val
 340 345 350
 Cys Met Gly Ser Pro Gly Leu Arg Leu Pro Gly Ala Leu Cys Ser Val
 355 360 365
 Leu Lys Tyr Arg Arg Ile Leu Asn Asn Leu Ala Gln Ala Asn Val Asp
 370 375 380
 Leu Ile Ile Leu Ala
 385

<210> 10016

<211> 191

<212> PRT

<213> B.fragilis

<400> 10016

Ala Met Asn Tyr Leu Glu Ile Thr Gly Ala Leu Val Gly Leu Ile Tyr
 1 5 10 15
 Leu Trp Leu Glu Tyr Arg Ala Ser Ile Tyr Leu Trp Ile Ala Gly Ile
 20 25 30
 Ile Met Pro Ala Ile Tyr Ile Phe Val Tyr Tyr Gln Ala Gly Leu Tyr
 35 40 45
 Ala Asp Phe Gly Ile Asn Ile Tyr Tyr Leu Leu Ala Ala Tyr Gly
 50 55 60
 Trp Met Val Trp Met Arg Gly Ser Glu Lys Glu Thr Arg Ala Glu Leu
 65 70 75 80
 Pro Ile Thr His Thr Pro Leu Lys Arg Tyr Leu Pro Leu Leu Leu Val
 85 90 95
 Phe Leu Ala Ala Phe Phe Gly Ile Ala Trp Ile Leu Ile Arg Phe Thr
 100 105 110
 Asp Ser Asn Val Pro Trp Leu Asp Ser Phe Thr Thr Ala Leu Ser Ile
 115 120 125
 Ile Gly Met Trp Met Leu Ala Arg Lys Tyr Val Glu Gln Trp Trp Ala
 130 135 140
 Trp Ile Val Val Asp Val Val Cys Cys Gly Leu Tyr Ile Tyr Lys Glu
 145 150 155 160
 Leu Tyr Phe Thr Ser Ala Leu Tyr Gly Leu Tyr Ser Ile Ile Ala Ile
 165 170 175
 Phe Gly Tyr Phe Lys Trp Lys Gln Met Met His Tyr Glu Ser Lys
 180 185 190

<210> 10017

<211> 64

<212> PRT

<213> B.fragilis

<400> 10017

Lys Asn Asp Leu Val Leu Val Ile His Tyr Glu Tyr Lys Asn Gln Thr
 1 5 10 15
 Thr Phe Trp His Trp Asn Ile Gly Arg Asn Glu Tyr Phe Thr Gly Tyr
 20 25 30
 Thr Phe Gln Cys Lys Pro Leu Asp Phe Asn Arg His Gly Asn Leu Ile
 35 40 45
 Val Pro Val Pro Cys Leu Val Leu Ser Gly Arg Leu Tyr Gly Ser Pro
 50 55 60

<210> 10018

<211> 62

<212> PRT
 <213> B.fragilis

<400> 10018

Leu	Tyr	Ile	Gln	Lys	Arg	Leu	Leu	Tyr	His	Met	Thr	Ala	Ser	Ser	Phe
1				5					10					15	
Leu	Lys	Ala	Ile	His	Ser	Met	Leu	Ala	Phe	His	Leu	Thr	Thr	Leu	Ser
			20					25					30		
Ile	Thr	Ile	Tyr	Leu	Asn	Lys	Gly	Gln	Leu	Glu	Ser	Ser	Ile	Trp	Ala
		35					40					45			
Ser	Phe	Ile	Ile	Ala	Phe	Asn	Ser	Ser	Ala	Phe	Ser	Gly	Tyr		
	50					55					60				

<210> 10019

<211> 530

<212> PRT

<213> B.fragilis

<400> 10019

Thr	Met	Ile	Gln	Glu	Tyr	Gln	Leu	Arg	Ile	Leu	Pro	Glu	Ile	Ala	Ala
1				5					10					15	
Ser	Glu	Gln	Gln	Leu	Lys	Ala	Tyr	Leu	Ser	Gln	Glu	Lys	Gly	Leu	Asn
			20					25					30		
Gln	Arg	Asp	Ile	Thr	Ala	Leu	Arg	Thr	Leu	Lys	Arg	Ser	Ile	Asp	Ala
		35					40					45			
Arg	Gln	Arg	Thr	Ile	Tyr	Val	Asn	Leu	Lys	Val	Arg	Val	Tyr	Leu	Asn
	50					55				60					
Glu	Met	Pro	Lys	Asp	Asp	Glu	Tyr	Glu	His	Thr	Ile	Tyr	Asn	Asn	Val
65					70					75					80
Glu	Arg	Lys	Pro	Gln	Val	Ile	Val	Val	Gly	Ala	Gly	Pro	Gly	Gly	Leu
				85					90					95	
Phe	Ala	Ala	Leu	Arg	Leu	Ile	Glu	Leu	Gly	Leu	Arg	Pro	Val	Val	Val
			100					105					110		
Glu	Arg	Gly	Lys	Asn	Val	Arg	Glu	Arg	Lys	Lys	Asp	Leu	Ala	Gln	Ile
		115					120					125			
Ser	Arg	Glu	His	Arg	Val	Asp	Pro	Glu	Ser	Asn	Tyr	Ser	Phe	Gly	Glu
	130					135					140				
Gly	Gly	Ala	Gly	Ala	Tyr	Ser	Asp	Gly	Lys	Leu	Tyr	Thr	Arg	Ser	Lys
145					150					155					160
Lys	Arg	Gly	Asn	Val	Asp	Lys	Ile	Leu	Asn	Val	Phe	Cys	Gln	His	Gly
			165						170					175	
Ala	Ser	Thr	Ala	Ile	Leu	Val	Asp	Ala	His	Pro	His	Ile	Gly	Thr	Asp
			180					185						190	
Lys	Leu	Pro	Arg	Val	Ile	Glu	Asn	Met	Arg	Asn	Thr	Ile	Ile	Glu	Cys
		195					200					205			
Gly	Gly	Glu	Val	His	Phe	Lys	Thr	Arg	Met	Asp	Ala	Leu	Ile	Ile	Glu
	210					215					220				
Gln	Gly	Glu	Val	Lys	Gly	Ile	Glu	Thr	Asn	Thr	Gly	Glu	Thr	Phe	Leu
225					230					235					240
Gly	Pro	Val	Ile	Leu	Ala	Thr	Gly	His	Ser	Ala	Arg	Asp	Val	Tyr	Arg
				245					250					255	
Trp	Leu	Ala	Ala	Asn	Asn	Val	Thr	Ile	Glu	Ala	Lys	Gly	Ile	Ala	Val
		260						265					270		
Gly	Val	Arg	Leu	Glu	His	Pro	Ala	Gly	Leu	Ile	Asp	Gln	Ile	Gln	Tyr
	275					280						285			
His	Asn	Arg	Ser	Gly	Arg	Gly	Lys	Tyr	Leu	Pro	Ala	Ala	Glu	Tyr	Ser
	290					295					300				
Phe	Val	Thr	Gln	Val	Asp	Gly	Arg	Gly	Val	Tyr	Ser	Phe	Cys	Met	Cys
305					310					315					320

Pro Gly Gly Phe Ile Val Pro Ala Ala Ser Gly Pro Glu Gln Val Val
 325 330 335
 Val Asn Gly Met Ser Pro Ser Asn Arg Gly Ser Arg Trp Ser Asn Ser
 340 345 350
 Gly Met Val Val Glu Ile Gln Pro Glu Asp Ile Ile Asn Asp Lys Arg
 355 360 365
 Leu Thr Val Asn Asn Glu Ala Glu Glu Thr Phe Pro Glu Leu Ala Val
 370 375 380
 Leu His Phe Gln Glu Glu Leu Glu Arg Gln Cys Trp Leu Gln Gly Gly
 385 390 395 400
 Arg Arg Gln Thr Ala Pro Ala Gln Arg Met Val Asp Phe Thr Arg Lys
 405 410 415
 Lys Leu Ser Tyr Asp Leu Pro Glu Ser Ser Tyr Ser Pro Gly Leu Ile
 420 425 430
 Ser Ser Pro Leu His Phe Trp Met Pro Glu Phe Ile Ala Gly Arg Leu
 435 440 445
 Ser Gln Gly Phe Gln Gln Phe Gly Arg Ser Ser His Gly Phe Leu Thr
 450 455 460
 Asn Glu Ala Val Met Ile Gly Val Glu Thr Arg Thr Ser Ser Pro Val
 465 470 475 480
 Arg Ile Val Arg Asp Lys Asp Thr Leu Gln His Ile Thr Leu Arg Gly
 485 490 495
 Leu Phe Pro Cys Gly Glu Gly Ala Gly Tyr Ala Gly Gly Ile Val Ser
 500 505 510
 Ala Gly Ile Asp Gly Glu Arg Cys Ala Glu Ala Val Ala Gln Phe Met
 515 520 525
 Asn Pro
 530

<210> 10020
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 10020
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 10021
 <211> 415
 <212> PRT
 <213> B.fragilis

<400> 10021
 His Tyr Glu His Cys Lys Arg Ile Lys Lys Lys Leu Met Lys His Ile
 1 5 10 15
 Ile Ile Leu Gly Asp Gly Met Ala Asp Trp Ala Val Lys Ser Leu Gly
 20 25 30
 Asp Lys Thr Leu Leu Gln Tyr Ala Lys Thr Pro Tyr Met Asp Lys Leu

35 40 45
 Ala Arg Met Gly Arg Asn Gly Arg Leu Ile Thr Val Ala Asp Gly Phe
 50 55 60
 His Pro Gly Ser Glu Val Ala Asn Met Ser Val Leu Gly Tyr Asn Leu
 65 70 75 80
 Pro Lys Val Tyr Glu Gly Arg Gly Pro Leu Glu Ala Ala Ser Ile Gly
 85 90 95
 Val Asp Leu Gln Pro Gly Glu Met Ala Met Arg Cys Asn Leu Ile Cys
 100 105 110
 Thr Glu Gly Asp Ile Leu Lys Asn His Ser Ala Gly His Ile Thr Thr
 115 120 125
 Glu Glu Ala Asp Val Leu Ile Gln Tyr Leu Gln Glu Lys Leu Gly Asp
 130 135 140
 Asp Arg Val Arg Phe His Thr Gly Val Gln Tyr Arg His Leu Leu Val
 145 150 155 160
 Val Lys Gly Gly Asn Lys Gln Leu Asp Cys Thr Pro Pro His Asp Val
 165 170 175
 Pro Leu Lys Pro Phe Arg Pro Leu Met Val Lys Pro Leu Val Pro Glu
 180 185 190
 Ala Glu Glu Thr Ala Ser Leu Leu Asn Glu Leu Ile Leu Lys Ser Gln
 195 200 205
 Glu Leu Leu Lys Asp His Pro Leu Asn Leu Lys Arg Met Ala Glu Gly
 210 215 220
 Lys Asp Pro Ala Asn Ser Ile Trp Pro Trp Ser Pro Gly Tyr Arg Pro
 225 230 235 240
 Gln Met Glu Arg Leu Ser Asp Thr Phe Pro Gln Val Lys Arg Gly Ala
 245 250 255
 Val Ile Ser Ala Val Asp Leu Ile Asn Gly Ile Gly Tyr Tyr Ala Gly
 260 265 270
 Leu Arg Arg Ile Ala Val Glu Gly Ala Thr Gly Leu Tyr Asp Thr Asn
 275 280 285
 Tyr Glu Asn Lys Val Ala Ala Ala Leu Glu Ala Leu Lys Thr Asp Asp
 290 295 300
 Phe Val Tyr Leu His Ile Glu Ala Ser Asp Glu Ala Gly His Glu Gly
 305 310 315 320
 Asp Val Ala Leu Lys Leu Lys Thr Ile Glu Asn Leu Asp Ser Arg Ala
 325 330 335
 Val Gly Pro Ile Tyr Glu Ala Val Lys Glu Trp Glu Glu Pro Val Ala
 340 345 350
 Ile Ala Val Leu Pro Asp His Pro Thr Pro Cys Glu Leu Arg Thr His
 355 360 365
 Thr Asn Glu Pro Val Pro Phe Ile Trp Tyr Pro Gly Ile Glu Pro
 370 375 380
 Asp Ser Val Gln Thr Phe Asp Glu Val Ala Ala Val Glu Gly Ser Tyr
 385 390 395 400
 Gly Leu Leu Lys Glu Asp Glu Phe Ile Lys Glu Phe Met Asn Arg
 405 410 415

<210> 10022

<211> 687

<212> PRT

<213> B.fragilis

<400> 10022

Gln Asp Asn Lys Val Met Lys Asn Lys Met Ser Ala Ser Met Phe Gln
 1 5 10 15
 Lys Glu Gln Val Ile Glu Ser Ile Arg Gln Ser Phe Val Lys Leu Asn
 20 25 30
 Pro Arg Met Met Ile Lys Asn Pro Ile Met Phe Thr Val Glu Val Val

	35				40				45						
Thr	Val	Ile	Met	Leu	Val	Val	Thr	Leu	Leu	Ser	Leu	Phe	Thr	Pro	Glu
	50					55					60				
Tyr	Gly	Thr	Phe	Gly	Tyr	Asn	Leu	Cys	Val	Phe	Leu	Ile	Leu	Phe	Val
65					70					75					80
Thr	Leu	Leu	Phe	Ala	Asn	Phe	Ala	Glu	Ala	Ile	Ala	Glu	Ala	Arg	Gly
				85					90					95	
Lys	Ala	Gln	Ala	Asp	Ser	Leu	Arg	Lys	Thr	Arg	Glu	Glu	Thr	Pro	Ala
			100					105					110		
Lys	Leu	Val	Ile	Gly	Asp	Lys	Val	Gln	Thr	Val	Ser	Ser	Ser	Lys	Leu
		115					120					125			
Lys	Lys	Gly	Asp	Val	Phe	Val	Cys	Glu	Ala	Gly	Asp	Thr	Ile	Pro	Ala
	130					135					140				
Asp	Gly	Glu	Ile	Ile	Glu	Gly	Leu	Ala	Ser	Ile	Asp	Glu	Ser	Ala	Ile
145					150					155					160
Thr	Gly	Glu	Ser	Ala	Pro	Val	Ile	Arg	Glu	Ala	Gly	Gly	Asp	Lys	Ser
				165					170					175	
Ser	Val	Thr	Gly	Gly	Thr	Lys	Val	Leu	Ser	Asp	His	Ile	Lys	Val	Leu
			180				185						190		
Val	Thr	Gln	Gln	Pro	Gly	Glu	Ser	Phe	Leu	Asp	Lys	Met	Ile	Ala	Leu
		195					200					205			
Val	Glu	Gly	Ala	Ser	Arg	Gln	Lys	Thr	Pro	Asn	Glu	Ile	Ala	Leu	Thr
	210					215					220				
Ile	Leu	Leu	Ala	Gly	Phe	Thr	Leu	Val	Phe	Val	Ile	Val	Cys	Val	Thr
225					230					235					240
Leu	Ile	Pro	Phe	Ala	Asp	Tyr	Thr	Ser	Leu	Glu	His	Pro	Gly	Thr	Ala
				245					250					255	
Ile	Ser	Ile	Ala	Ala	Ile	Leu	Ser	Leu	Phe	Val	Cys	Leu	Ile	Pro	Thr
			260					265					270		
Thr	Ile	Gly	Gly	Leu	Leu	Ser	Ala	Ile	Gly	Ile	Ala	Gly	Met	Asp	Arg
		275					280					285			
Ala	Leu	Arg	Ala	Asn	Val	Ile	Thr	Lys	Ser	Gly	Lys	Ala	Val	Glu	Thr
	290					295					300				
Ala	Gly	Asp	Ile	Asp	Thr	Leu	Leu	Leu	Asp	Lys	Thr	Gly	Thr	Ile	Thr
305					310					315					320
Ile	Gly	Asn	Arg	Arg	Ala	Thr	Lys	Phe	His	Ser	Ala	Pro	Gly	Val	Gly
			325						330					335	
Pro	Arg	Glu	Phe	Val	Thr	Thr	Cys	Leu	Ala	Ser	Leu	Ser	Asp	Glu	
			340					345				350			
Thr	Pro	Glu	Gly	Lys	Ser	Ile	Val	Glu	Leu	Gly	Arg	Glu	Ser	Gly	Val
		355				360						365			
Arg	Met	Arg	Ser	Leu	Gln	Thr	Ala	Gly	Ala	Arg	Met	Ile	Gln	Phe	Thr
	370					375					380				
Ala	Glu	Thr	Lys	Cys	Ser	Gly	Val	Asp	Leu	Ala	Asp	Gly	Thr	Gln	Ile
385					390					395					400
Arg	Lys	Gly	Ala	Phe	Asp	Ala	Ile	Arg	Lys	Ile	Thr	Glu	Ala	Ala	Gly
				405					410					415	
Asn	Lys	Phe	Pro	Lys	Glu	Ile	Glu	Glu	Val	Ile	Ser	Glu	Ile	Ser	Gly
			420					425					430		
Asn	Gly	Gly	Thr	Pro	Leu	Val	Val	Cys	Val	Asp	Arg	Lys	Val	Thr	Gly
		435				440						445			
Val	Ile	Glu	Leu	Gln	Asp	Ile	Ile	Lys	Pro	Gly	Ile	Gln	Glu	Arg	Phe
	450					455					460				
Glu	Arg	Leu	Arg	Lys	Met	Gly	Val	Lys	Thr	Val	Met	Val	Thr	Gly	Asp
465					470					475					480
Asn	Pro	Leu	Thr	Ala	Lys	Tyr	Ile	Ala	Glu	Lys	Ala	Gly	Val	Asp	Asp
				485					490					495	
Phe	Ile	Ala	Glu	Ala	Lys	Pro	Glu	Asp	Lys	Met	Glu	Tyr	Ile	Arg	Lys
			500					505						510	

Glu Gln Gln Ser Gly Lys Leu Val Ala Met Met Gly Asp Gly Thr Asn
 515 520 525
 Asp Ala Pro Ala Leu Ala Gln Ala Asn Val Gly Val Ala Met Asn Ser
 530 535 540
 Gly Thr Gln Ala Ala Lys Glu Ala Gly Asn Met Val Asp Leu Asp Asn
 545 550 555 560
 Asp Pro Thr Lys Leu Ile Glu Ile Val Glu Ile Gly Lys Gln Leu Leu
 565 570 575
 Met Thr Arg Gly Thr Leu Thr Thr Phe Ser Ile Ala Asn Asp Val Ala
 580 585 590
 Lys Tyr Phe Ala Ile Val Pro Ala Leu Phe Met Val Ala Ile Pro Glu
 595 600 605
 Leu Gly Ala Leu Asn Ile Met Asn Leu His Ser Pro Glu Ser Ala Ile
 610 615 620
 Leu Ser Ala Val Ile Phe Asn Ala Ile Ile Ile Pro Ile Leu Ile Pro
 625 630 635 640
 Leu Ala Leu Lys Gly Val Gln Tyr Lys Pro Ile Gly Ala Ser Ala Leu
 645 650 655
 Leu Arg Arg Asn Leu Leu Ile Tyr Gly Leu Gly Gly Val Ile Val Pro
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 Phe Val Gly Ile Lys Leu Ile Asp Leu Val Val Ser Leu Phe Phe
 675 680 685

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 <213> B.fragilis

<400> 10023
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 Ile Val Leu Met Val Val Leu Ala Tyr Pro Leu Gly Arg Tyr Ile Ala
 20 25 30
 Arg Val Tyr Lys Gly Glu Lys Thr Trp Ser Asp Phe Ile Ala Pro Ile
 35 40 45
 Glu Arg Val Ile Tyr Lys Ile Cys Gly Ile Asn Pro Gln Glu Glu Met
 50 55 60
 Asn Trp Lys Gln Phe Leu Lys Ala Leu Leu Ile Leu Asn Ala Phe Trp
 65 70 75 80
 Phe Val Trp Gly Met Val Leu Leu Val Ser Gln Gly Trp Leu Pro Leu
 85 90 95
 Asn Pro Asp Gly Asn Gly Ala Gln Thr Pro Asp Gln Ala Phe Asn Thr
 100 105 110
 Cys Ile Ser Phe Met Val Asn Cys Asn Leu Gln His Tyr Ser Gly Glu
 115 120 125
 Ser Gly Leu Thr Tyr Phe Thr Gln Leu Phe Val Ile Met Leu Phe Gln
 130 135 140
 Phe Ile Thr Ala Ala Thr Gly Met Ala Ala Met Ala Gly Val Met Lys
 145 150 155 160
 Ser Met Ala Ala Lys Ser Thr Gln Thr Ile Gly Asn Phe Trp His Phe
 165 170 175
 Leu Val Ile Ser Cys Thr Arg Ile Leu Leu Pro Leu Ser Leu Val Val
 180 185 190
 Gly Phe Ile Leu Ile Leu Gln Gly Thr Pro Met Gly Phe Asp Gly Arg
 195 200 205
 Met Gln Leu Thr Thr Leu Glu Gly Gln Glu Gln Met Val Ser Gln Gly
 210 215 220
 Pro Thr Ala Ala Ile Val Pro Ile Lys Gln Leu Gly Thr Asn Gly Gly
 225 230 235 240

Gly Tyr Phe Gly Val Asn Ser Ser His Pro Leu Glu Asn Pro Thr Tyr
 245 250 255
 Leu Thr Asn Met Val Glu Cys Trp Ser Ile Leu Ile Ile Pro Met Ala
 260 265 270
 Met Val Leu Ala Leu Gly Phe Tyr Thr Asn Arg Arg Lys Leu Gly Tyr
 275 280 285
 Ser Ile Phe Gly Val Met Leu Phe Ala Tyr Leu Ala Gly Val Phe Ile
 290 295 300
 Asn Val Gly Gln Glu Met Gly Gly Asn Pro Arg Ile Ser Glu Met Gly
 305 310 315 320
 Ile Ala Gln Asp His Gly Ala Met Glu Gly Lys Glu Val Arg Leu Gly
 325 330 335
 Ala Gly Ala Thr Ala Leu Trp Ser Val Thr Thr Thr Val Thr Ser Asn
 340 345 350
 Gly Ser Val Asn Gly Met His Asp Ser Thr Met Pro Leu Ser Gly Met
 355 360 365
 Val Glu Met Leu Asn Met Gln Ile Asn Thr Trp Phe Gly Gly Val Gly
 370 375 380
 Val Gly Trp Leu Asn Tyr Tyr Thr Phe Ile Ile Met Ala Val Phe Ile
 385 390 395 400
 Ser Gly Leu Met Val Gly Arg Thr Pro Glu Phe Leu Gly Lys Lys Val
 405 410 415
 Glu Ala Arg Glu Met Lys Ile Ala Thr Phe Val Ala Leu Leu His Pro
 420 425 430
 Phe Val Ile Leu Val Phe Thr Ala Ile Ser Ser Tyr Val Tyr Thr His
 435 440 445
 His Pro Asp Phe Val Glu Ser Glu Gly Gly Trp Leu Asn Asn Leu Gly
 450 455 460
 Phe His Gly Leu Ser Glu Gln Leu Tyr Glu Tyr Thr Ser Ser Ala Ala
 465 470 475 480
 Asn Asn Gly Ser Gly Phe Glu Gly Leu Gly Asp Asn Thr Tyr Phe Trp
 485 490 495
 Asn Trp Thr Cys Gly Ile Val Leu Ile Leu Ser Arg Phe Ile Pro Ile
 500 505 510
 Val Gly Gln Val Ala Ile Ala Gly Leu Leu Ala Gln Lys Lys Phe Ile
 515 520 525
 Pro Glu Ser Ala Gly Thr Leu Lys Thr Asp Thr Val Thr Phe Ala Val
 530 535 540
 Met Thr Phe Ala Val Ile Phe Ile Val Ala Ala Leu Ser Phe Phe Pro
 545 550 555 560
 Val His Ala Leu Ser Thr Ile Ala Glu His Leu Ser Leu
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<212> PRT

<213> B.fragilis

<400> 10024

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 His Pro Ser Leu Leu Leu Glu Tyr Leu Val Ser Ile Leu Cys Ser Leu
 20 25 30
 Lys Arg His Tyr Asn Thr Lys Tyr Thr Gln His Met Lys Asn Ile Phe
 35 40 45
 Phe Ile Cys Leu Phe Leu Ser Met Ser Leu Ala Val Ser Gly Lys Lys
 50 55 60
 Ala Gln Val Ser Ile Ser Cys Leu Lys Thr Glu Met Leu Val Asn Pro
 65 70 75 80

Gln Asn Ile Asp Cys Pro Ser Pro Arg Leu Ser Trp Glu Ile Leu Ser
 85 90 95
 Asp Val Arg Asp Val Arg Gln Val Ser Tyr His Ile Leu Val Ser Thr
 100 105 110
 Ser Leu Glu Lys Leu Asn Arg Glu Glu Gly Asp Leu Trp Asp Thr Gly
 115 120 125
 Asp Val Ala Ser Asp Gln Ser Ala Tyr Val Ser Tyr Gly Gly Asp Met
 130 135 140
 Leu Asp Ser Arg Thr Gln Cys Tyr Trp Lys Val Arg Val Lys Thr Asn
 145 150 155 160
 Lys Gly Ile Ser Ala Trp Ser Glu Pro Ala Ser Trp Glu Met Gly Leu
 165 170 175
 Leu His Pro Ser Asp Trp Gln Ala Val Trp Ile Gly Arg Ala Phe Pro
 180 185 190
 Gln Asp Lys Leu Glu Gly Asn Thr Arg Val Pro Ala Arg Tyr Leu Arg
 195 200 205
 Lys Pro Phe Asn Leu Asn Ser Lys Lys Val Arg Lys Ala Thr Leu Tyr
 210 215 220
 Ile Cys Gly Leu Gly Phe Tyr Glu Ala Tyr Ile Asn Gly Lys Lys Ile
 225 230 235 240
 Gly Asp Gln Val Leu Ala Pro Thr Pro Thr Asp Tyr Ser Lys Ser Val
 245 250 255
 Lys Tyr Asn Arg Phe Asp Val Thr Gly Gln Leu Leu Lys Gly Ala Asn
 260 265 270
 Ala Ile Gly Val Ile Leu Gly Asn Gly Arg Tyr Thr Ser Met Arg Met
 275 280 285
 Pro Gly Val Arg His Phe Asp Val Pro Lys Met Ile Ala Gln Leu Glu
 290 295 300
 Val Tyr Tyr Glu Asp Gly Glu Lys Arg Val Ile Ala Ser Asp Ala Ser
 305 310 315 320
 Trp Lys Ile Thr Ala Glu Gly Pro Ile Gly Thr Asn Asn Glu Phe Asp
 325 330 335
 Gly Glu Glu Tyr Asp Ala Arg Lys Glu Met Pro Gly Trp Asn Thr Tyr
 340 345 350
 Pro Phe Asp Asp Thr Lys Trp Leu Gln Ala Glu Val Val Ser Leu Pro
 355 360 365
 Gly Gly Lys Leu Glu Ala Gln Leu Asn Arg Asn Met Lys Val Met Asp
 370 375 380
 Thr Val Lys Pro Ile Gly Ile Thr Glu Ser Ala Pro Gly Val Tyr Ile
 385 390 395 400
 Leu Asp Met Gly Gln Asn Met Val Gly Trp Leu Arg Met Lys Val Lys
 405 410 415
 Gly Gln Ser Gly Asp Thr Leu Lys Leu Arg Phe Ala Glu Leu Leu Gln
 420 425 430
 Lys Asp Gly Ser Ile Tyr Thr Ala Asn Leu Arg Thr Ala His Ser Ala
 435 440 445
 Asp Thr Tyr Ile Leu Lys Gly Asn Ser Met Glu Glu Trp Gln Pro Thr
 450 455 460
 Phe Thr Tyr His Gly Phe Arg Phe Val Glu Leu Thr Gly Phe Arg Glu
 465 470 475 480
 Lys Pro Ser Leu Ser Asp Phe Glu Gly Gln Val Ile Tyr Asp Glu Met
 485 490 495
 Glu Thr Thr Gly Asn Leu Glu Thr Ser Asp Pro Met Ile Asn Arg Ile
 500 505 510
 Tyr Lys Asn Ala Tyr Trp Gly Ile Arg Gly Asn Tyr Arg Gly Met Pro
 515 520 525
 Thr Asp Cys Pro Gln Arg Asp Glu Arg Met Gly Trp Leu Gly Asp Arg
 530 535 540
 Ala Val Gly Ser Gln Gly Glu Ser Tyr Ile Phe Asn Asn His Leu Leu

545		550		555		560									
Tyr	Ala	Lys	Trp	Leu	Asp	Asp	Ile	Glu	Gln	Ala	Gln	Lys	Glu	Asn	Gly
		565		570		575									
Ala	Val	Pro	Asp	Val	Ala	Pro	Asn	Tyr	Trp	Asp	Val	Cys	Thr	Asp	Asn
		580		585		590									
Met	Thr	Trp	Pro	Gly	Ala	Tyr	Leu	Ile	Ile	Ala	Asn	Met	Leu	Tyr	Asp
		595		600		605									
Gln	Phe	Gly	Asp	Lys	Gln	Pro	Ile	Ile	Lys	His	Tyr	Pro	Ser	Met	Lys
	610			615		620									
Lys	Trp	Met	Arg	Tyr	Met	Lys	Asp	Lys	Tyr	Met	Val	Asp	His	Ile	Met
	625			630		635									
Thr	Lys	Asp	Ile	Phe	Gly	Asp	Trp	Cys	Met	Pro	Ser	Gln	Ser	Ser	Glu
				645		650									
Leu	Ile	His	Ser	Lys	Asp	Pro	Ser	Arg	Ile	Thr	Glu	Ala	Glu	Val	Leu
			660			665									
Gly	Thr	Thr	Phe	Tyr	Tyr	Tyr	Leu	Ser	Asn	Leu	Met	Val	Arg	Phe	Ala
		675				680									
Ala	Leu	Ala	Gly	Tyr	Pro	Gln	Asp	Ala	Glu	Asp	Phe	Arg	Lys	Glu	Ser
	690					695									
Glu	Leu	Ala	Lys	Glu	Ala	Phe	Asn	Ser	Lys	Tyr	Leu	His	Thr	Glu	Leu
	705					710									
Gly	Tyr	Tyr	Ser	Asn	Asn	Thr	Val	Thr	Ala	Asn	Ile	Leu	Ser	Leu	Arg
			725			730									
Phe	Gly	Met	Val	Pro	Glu	Ala	Tyr	Lys	Glu	Val	Val	Phe	Arg	Asn	Ile
			740			745									
Val	Glu	Lys	Thr	Met	Lys	Asp	Phe	Asn	Gly	His	Val	Ser	Thr	Gly	Leu
		755				760									
Val	Gly	Ile	Gln	Gln	Leu	Met	Arg	Gly	Leu	Ser	Asp	Tyr	Gly	Arg	Ile
	770					775									
Asp	Leu	Ala	Tyr	Arg	Ile	Ala	Thr	Asn	Arg	Thr	Tyr	Pro	Ser	Trp	Gly
	785					790									
Tyr	Met	Val	Asp	Asn	Gly	Ala	Thr	Thr	Ile	Trp	Glu	Leu	Trp	Asn	Gly
			805			810									
Asn	Thr	Ala	Asp	Pro	Ala	Met	Asn	Ser	Ala	Asn	His	Val	Met	Leu	Leu
		820				825									
Gly	Asp	Leu	Ile	Val	Trp	Ala	Tyr	Gly	Tyr	Leu	Gly	Gly	Ile	Ser	Asn
		835				840									
Ala	Pro	Gly	Ser	Val	Gly	Phe	Lys	Gln	Ile	Gln	Leu	Lys	Pro	Tyr	Pro
	850					855									
Val	Asp	Gly	Leu	Asp	Phe	Val	Asn	Thr	Ser	Phe	His	Ser	Ile	Tyr	Gly
	865					870									
Glu	Val	Arg	Ser	His	Trp	Lys	Lys	Glu	Asp	Gly	Ser	Phe	Cys	Trp	Asp
			885			890									
Ile	Ser	Val	Pro	Cys	Asn	Thr	Ser	Ala	Leu	Val	Tyr	Val	Pro	Val	Ala
		900				905									
Asp	Lys	Ser	Ile	Asp	Pro	Lys	Glu	Lys	Lys	Arg	Ile	Val	Gly	Glu	Gly
		915				920									
Gly	Thr	Phe	Leu	Arg	Met	Glu	Gly	Ser	Tyr	Ala	Val	Phe	Ser	Phe	Pro
	930					935									
Ser	Gly	Ser	Tyr	Arg	Leu	Lys	Thr	Arg	Leu						
	945					950									

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<211> 986

<212> PRT

<213> B.fragilis

<400> 10025

His Lys His Lys Met Arg His Leu Phe Leu Leu Ala Ala Leu Phe Cys

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Ser Lys Thr Gly Phe Ala Leu Thr Thr Ala Lys Ala Arg Ala Lys Ile			
35	40	45	
Tyr Tyr Asp Ala Asn Asp Ala Leu Val Ile Lys Arg Ser Ala Glu Leu			
50	55	60	
Phe Ala Arg Asp Ile Gln Met Val Thr Gly Gln Lys Pro Glu Leu Ile			
65	70	75	80
Gln Lys Arg Glu Arg Ala Lys Ala Leu Val Ile Val Gly Thr Ile Glu			
85	90	95	
Lys Asn Gln Trp Ile Cys Glu Leu Ala Gln Lys Gly Lys Ile Asp Ile			
100	105	110	
Arg Pro Leu Gln Gly Ala Trp Glu Arg Tyr Leu Ile Gln Thr Val Asp			
115	120	125	
Asn Pro Ser Pro Gly Val Ala Lys Ala Leu Val Ile Ala Gly Ser Asp			
130	135	140	
Arg Arg Gly Ala Ala Tyr Gly Leu Phe Ser Ile Ser Glu Met Met Gly			
145	150	155	160
Val Ser Pro Trp Tyr Trp Trp Gly Asp Val Pro Val Lys Thr His Lys			
165	170	175	
Ala Leu Tyr Val Asp Ala Pro Pro Thr Tyr Ser Lys Thr Pro Ser Val			
180	185	190	
Lys Tyr Arg Gly Ile Phe Leu Asn Asp Glu Asp Trp Gly Leu Lys Pro			
195	200	205	
Trp Ala Ala Lys Thr Phe Glu Lys Glu Arg Gly Asn Ile Gly Pro Arg			
210	215	220	
Thr Tyr Ala Lys Ile Cys Glu Leu Leu Leu Arg Leu Lys Ala Asn His			
225	230	235	240
Leu Ala Pro Ala Met His Pro Val Ser Thr Ala Phe Tyr Gln Ile Pro			
245	250	255	
Glu Asn Lys Leu Val Ala Asp Thr Phe Ala Ile Val Met Gly Ser Ser			
260	265	270	
His Cys Glu Pro Leu Leu Leu Asn Thr Ala Ser Glu Trp His Ser Lys			
275	280	285	
Thr Met Gly Pro Trp Asp Tyr Asn Ala Asn Lys Asp Lys Ile Asn Glu			
290	295	300	
Val Leu Gly Asn Arg Val Lys Glu Asn Cys Ala Tyr Glu Asn Val Tyr			
305	310	315	320
Thr Leu Ala Leu Arg Gly Leu His Asp Ala Ala Met Gly Gly Gly Asp			
325	330	335	
Val Pro Met Lys Glu Lys Val Lys Met Leu Glu Asn Ala Leu Lys Asp			
340	345	350	
Gln Arg Ser Leu Leu Thr Arg His Ile Asp Lys Pro Ala Glu Thr Ile			
355	360	365	
Pro Gln Ala Phe Thr Pro Tyr Lys Glu Val Leu Glu Ile Tyr Ser Asn			
370	375	380	
Gly Leu Glu Leu Pro Asp Asp Val Thr Ile Ile Trp Ala Asp Asp Asn			
385	390	395	400
Phe Gly Tyr Met Lys Arg Leu Ser Gly Pro Gln Glu Gln Lys Arg Thr			
405	410	415	
Gly Arg Ala Gly Val Tyr Tyr His Ile Ser Tyr Leu Gly Val Pro His			
420	425	430	
Ser Tyr Leu Trp Phe Ser Thr Thr Pro Pro Ala Leu Met Tyr Glu Glu			
435	440	445	
Leu Arg Lys Ala Tyr Asp Thr Thr Ala Asp Arg Ile Trp Leu Ala Asn			
450	455	460	
Cys Gly Asp Leu Lys Gly Ala Glu Ala Gln Val Ser Phe Phe Leu Asp			
465	470	475	480

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 100

Met	Ala	Tyr	Asp	Ile	Asp	Gln	Phe	Asn	Glu	Asn	Asn	Val	His	Thr	Tyr	
				485					490						495	
Pro	Ala	Arg	Trp	Leu	Ala	Lys	Ile	Phe	Gly	Glu	Gln	Tyr	Tyr	Asp	Thr	
				500				505						510		
Leu	Lys	Asp	Ile	Thr	Cys	Ser	His	Ile	Asn	Leu	Ala	Phe	Ser	Arg	Lys	
		515					520					525				
Pro	Glu	Tyr	Met	Gly	Trp	Gly	Tyr	Trp	Asn	Asn	Tyr	Trp	Gly	Gly	Gly	
	530					535					540					
Glu	Lys	Arg	Thr	Asp	Thr	Glu	Phe	Ser	Phe	Ile	Asn	Tyr	Asn	Glu	Ala	
545					550					555					560	
Gly	Arg	Arg	Leu	Ala	Glu	Tyr	Arg	Arg	Ile	Gly	Lys	Lys	Ala	Glu	Glu	
				565					570						575	
Met	Leu	Ala	Thr	Val	Asp	Lys	Lys	Ala	Lys	Pro	Ala	Leu	Tyr	Gln	Leu	
			580					585						590		
Leu	Tyr	Tyr	Pro	Val	Lys	Gly	Ala	Glu	Leu	Met	Asn	Arg	Met	Asn	Met	
		595					600					605				
Thr	Gly	Gln	Leu	Tyr	Arg	Gln	Tyr	Val	Arg	Gln	Lys	Arg	Ala	Ala	Ala	
	610					615					620					
Asp	Asp	Leu	Lys	Arg	Glu	Thr	Thr	Thr	Cys	His	Asp	Ser	Leu	Glu	Ile	
625					630					635					640	
Ile	Thr	Asp	Gly	Tyr	Asn	Ser	Leu	Leu	Asp	Gly	Lys	Trp	Lys	Tyr	Met	
				645					650						655	
Met	Ser	Leu	Arg	Gln	Asn	Tyr	Asp	Gly	Ser	Ser	Ser	Tyr	Phe	Met	Leu	
			660					665						670		
Pro	Leu	Met	Glu	Glu	Ser	Tyr	Val	Ala	Thr	Gly	Asp	Pro	Lys	Leu	Ala	
		675					680					685				
Val	Gln	Val	Glu	Ser	Glu	Gln	Leu	Asn	Arg	Gly	Gly	Phe	Ser	Phe	Arg	
	690					695					700					
Ala	Leu	Pro	Val	Phe	Asn	Thr	Tyr	Ser	Arg	Lys	Ser	His	Trp	Ile	Asp	
705					710					715					720	
Val	Tyr	Asn	Gln	Gly	Gly	Gly	Met	Leu	Asp	Trp	Lys	Ser	Glu	Leu	Ser	
				725					730						735	
Asp	Glu	Trp	Ile	Val	Leu	Ser	Arg	Gln	Ser	Gly	Ser	Thr	Arg	Thr	Glu	
			740					745					750			
Asp	Arg	Ile	Gln	Val	Ser	Ile	Asp	Trp	Asn	Lys	Val	Pro	Ser	Gly	Glu	
		755					760					765				
Lys	Val	Thr	Gly	Phe	Ile	Glu	Phe	Ser	Ser	Gly	Met	Gln	Lys	Glu	Arg	
	770					775					780					
Val	Leu	Val	Ser	Val	Phe	Asn	Pro	Lys	Thr	Pro	Val	Arg	Asp	Glu	Leu	
785					790					795					800	
Gln	Gly	Leu	Phe	Ile	Glu	Glu	Asn	Gly	Tyr	Val	Ser	Leu	Pro	Ala	Thr	
				805					810						815	
Ala	Phe	His	Arg	Lys	Phe	Glu	Ser	Glu	Asp	Val	Lys	Met	Ser	Val	Leu	
			820					825					830			
Pro	Gly	Leu	Gly	Phe	Glu	Gly	Ala	Ala	Leu	Gln	Ile	Gly	Ser	Pro	Ile	
		835					840					845				
Ala	Pro	Leu	Gln	Met	Tyr	Arg	Ser	Ser	Glu	Val	Pro	Arg	Val	Glu	Tyr	
		850				855					860					
Asp	Phe	Tyr	Thr	Phe	Asn	Ala	Gly	Met	Val	Asp	Val	Tyr	Thr	Tyr	Val	
865					870					875					880	
Leu	Pro	Thr	Phe	Pro	Leu	His	Ala	Asp	Arg	Asp	Tyr	Lys	Leu	Pro	Glu	
				885					890						895	
His	Thr	Asn	Ser	Asp	Thr	Lys	Tyr	Ser	Val	Arg	Ile	Asp	Asp	Gly	Ser	
			900					905					910			
Ile	Ser	Thr	Pro	Ser	Thr	Ser	Ala	Ile	Glu	Tyr	Ser	Gln	Ile	Trp	Tyr	
		915					920					925				
Asp	Ser	Val	Leu	Lys	Asn	Cys	Arg	Val	Asn	Lys	Ser	Thr	Leu	Tyr	Val	
	930					935					940					
Lys	Ala	Pro	Gly	Lys	His	Thr	Leu	Gln	Ile	Arg	Cys	Gly	Asp	Pro	Gly	

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

945		950		955		960										
Thr	Val	Ile	Gln	Lys	Ile	Val	Ile	Asp	Met	Gly	Gly	Leu	Lys	Arg	Ser	
			965						970					975		
Tyr	Leu	Gly	Pro	Glu	Thr	Thr	Leu	Cys	Arg							
			980					985								

<210> 10026
 <211> 333
 <212> PRT
 <213> B.fragilis

<400> 10026

Glu	Leu	Pro	Asn	Glu	Ser	Glu	Cys	Arg	Met	Arg	Glu	Lys	Val	Arg	Phe
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Cys	Val	Ala	Leu	Cys	Cys	Ser	Val	Val	Met	Val	Leu	Leu	Ala	Ser	Cys
			20					25					30		
Arg	Tyr	Ser	Leu	Pro	Asp	Leu	Pro	Ala	Glu	Gly	Met	Ser	Arg	Lys	Thr
		35					40					45			
Lys	Asp	Ser	Leu	Thr	Tyr	Leu	Ser	Lys	Tyr	His	Tyr	Thr	Trp	Asn	Thr
	50					55					60				
Asn	Leu	Glu	Val	Leu	Asp	Asp	Ser	Val	Arg	Leu	Glu	Tyr	Leu	Pro	Leu
65					70				75						80
Lys	Asp	Ala	Tyr	Val	Asn	Leu	Tyr	Lys	Gly	Asp	Arg	Val	Val	Val	Ala
			85						90					95	
Glu	Phe	Ser	Val	His	Pro	Gln	Asp	Ser	Val	Asp	Ser	Ile	Trp	Val	Lys
			100					105					110		
Val	Ala	His	Ser	Gln	Glu	Val	Gln	Gly	Trp	Val	Arg	Asn	Lys	Glu	Leu
		115					120					125			
Val	Arg	Ser	Phe	Val	Pro	Thr	Asp	Ser	Ile	Ser	Gln	Phe	Ile	His	Leu
	130					135					140				
Phe	Ser	Asp	Thr	His	Ala	Ser	Tyr	Phe	Val	Phe	Ile	Phe	Ala	Leu	Phe
145					150					155					160
Val	Gly	Val	Tyr	Leu	Leu	Arg	Ala	Phe	Met	Lys	Lys	Arg	Leu	Gln	Met
			165						170					175	
Val	Tyr	Phe	Asn	Asp	Ile	Asp	Ser	Val	Tyr	Pro	Leu	Phe	Leu	Cys	Leu
		180					185					190			
Leu	Met	Ala	Phe	Ser	Ala	Thr	Val	Tyr	Glu	Thr	Met	Gln	Val	Phe	Val
	195					200						205			
Pro	Asp	Thr	Trp	Glu	His	Phe	Tyr	Phe	Asn	Pro	Thr	Leu	Ser	Pro	Phe
	210					215					220				
Lys	Val	Pro	Phe	Ile	Leu	Ser	Val	Phe	Leu	Thr	Gly	Ile	Trp	Leu	Phe
225				230						235					240
Ile	Ile	Val	Thr	Leu	Ala	Val	Leu	Asp	Asp	Leu	Phe	Arg	Gln	Leu	Thr
			245						250					255	
Pro	Ala	Val	Ala	Val	Phe	Tyr	Leu	Leu	Gly	Leu	Met	Ser	Cys	Cys	Ile
		260						265					270		
Leu	Cys	Tyr	Phe	Leu	Phe	Ile	Leu	Thr	Thr	His	Ile	Tyr	Ile	Gly	Tyr
		275					280					285			
Phe	Phe	Val	Ala	Cys	Phe	Ile	Trp	Leu	Phe	Val	Lys	Lys	Val	Arg	Arg
	290					295					300				
Gly	Ser	Gly	Tyr	Lys	Tyr	Arg	Cys	Gly	Asn	Cys	Gly	His	Lys	Leu	Arg
305					310					315					320
Asp	Lys	Gly	Gln	Cys	Pro	His	Cys	Gly	Ala	Val	Asn	Glu			
			325						330						

<210> 10027
 <211> 1152
 <212> PRT
 <213> B.fragilis

Lys 1	Pro	Pro	Lys	Asp 5	Gly	Tyr	Cys	Leu	Thr 10	Lys	Lys	Asn	Asn	Ile 15	Met
Asn	Lys	Asn	Arg 20	Ser	Ile	Arg	Val	Ala 25	Ala	Phe	Cys	Leu 30	Gly	Leu	Met
Leu	Ala	Gly 35	Ser	Leu	Gln	Val	His 40	Ala	Gln	Lys	Val 45	Thr	Phe	Arg	Asp
Gly	Thr 50	Val	Ser	Leu	Lys	Gln 55	Ala	Phe	Glu	Lys	Ile 60	Glu	Ala	Ser	Ser
Lys 65	Tyr	Lys	Ile	Ala	Tyr 70	Asn	Asp	Ser	His 75	Leu	Asn	Val	Ser	Arg	Lys
Val	Ser	Leu	Asn 85	Gln	Lys	Glu	Thr	Glu 90	Val	Leu	Glu	Ile	Leu 95	Ala	Thr
Ile	Leu	Lys	Asp 100	Thr	Gly	Tyr	Thr	Tyr 105	Lys	Lys	Ser	Gly	Asn 110	Tyr	Ile
Val	Ile	Val	Pro 115	Val	Glu	Gln	Lys 120	Pro	Ala	Ser	Lys	Val	Lys 125	Lys	Val
Lys	Gly 130	Val	Val	Lys	Asp	Ala 135	Ser	Gly	Glu	Ala	Ile 140	Ile	Gly	Ala	Asn
Val 145	Leu	Val	Lys	Gly	Thr 150	Ala	Thr	Gly	Val	Ile 155	Thr	Asp	Met	Asn	Gly
Ser	Phe	Glu	Leu	Glu 165	Val	Pro	Gly	Asn 170	Ala	Val	Leu	Gln	Ile 175	Thr	Tyr
Ile	Gly	Tyr	Val 180	Gln	Gln	Asp	Val	Ala 185	Val	Lys	Asn	Arg	Asp 190	Gln	Leu
Ala	Val	Leu 195	Leu	Lys	Glu	Asp	Thr 200	Lys	Thr	Leu	Asp	Glu 205	Val	Val	Val
Val	Gly 210	Tyr	Gly	Thr	Met	Lys 215	Lys	Lys	Asp	Leu	Thr	Gly	Ala	Val	Ala
Ser 225	Val	Lys	Met	Asp	Asp 230	Thr	Pro	Leu	Ser	Thr 235	Ile	Ser	Thr	Val	Ser
His	Ala	Leu	Ala 245	Gly	Lys	Ala	Ala	Gly 250	Leu	Gln	Val	Asn	Thr 255	Ile	Ser
Ala	Gln	Pro	Gly 260	Gly	Gly	Thr	Thr	Phe 265	Arg	Ile	Arg	Gly	Ala 270	Ala	Ser
Thr	Gly 275	Ala	Gly	Asn	Asp	Pro	Leu 280	Ile	Ile	Val	Asp	Gly 285	Phe	Pro	Val
Ser	Asn 290	Ala	Gly	Asn	Val	Ser 295	Val	Gly	Tyr	Asn	Ser	Asp	Asn	Gly	Thr
Thr 305	Asp	Asn	Ile	Leu	Ala 310	Ser	Ile	Asn	Pro	Asn 315	Asp	Ile	Glu	Ser	Ile
Glu	Val	Leu	Lys 325	Asp	Ala	Ser	Ser	Thr 330	Ala	Ile	Tyr	Gly	Ala 335	Arg	Ala
Gly	Ser	Gly 340	Val	Ile	Ile	Ile	Thr 345	Thr	Lys	Arg	Gly	Lys	Glu 350	Gly	Lys
Pro	Lys 355	Val	Thr	Tyr	Ser	Gly	Ser 360	Ala	Thr	Val	Gln	Thr 365	Met	Ala	Thr
Lys	Tyr 370	Glu	Met	Leu	Asp	Ala 375	Gln	Asp	Phe	Met	Ile	Gln	Ser	Asn	Arg
Trp 385	Phe	Lys	Glu	Lys	Trp 390	Met	Tyr	Asp	Asn	Lys 395	Val	Gly	Ile	Tyr	Gly
Gly	Lys	Asn	Glu 405	Ser	Glu	Ala	Gly	Ser	Ala 410	Tyr	His	Pro	Lys	Tyr	Ser
Asp	Ala	Asp	Ile 420	Ala	Asn	Pro	Val	Asn 425	Asp	Thr	Asp	Trp	Tyr	Asp	Arg
Ile	Thr 435	Arg	Thr	Gly	Phe	Gln	Thr 440	Gln	His	Asn	Ile	Ser	Ile 445	Asn	Gly
Gly	Thr	Glu	Tyr	Thr	Lys	Tyr	Leu	Ile	Ser	Gly	Asn	Phe	Phe	Asn	Glu

450	Lys Gly Ile Val	455	Lys Asn Asn Gly Met Ser Arg Tyr Thr Gly Arg Val	460	
465	Asn Leu Asp Gln	470	Lys Leu Ser Lys Tyr Ala Lys Val Gly Ile Asn Leu	475	480
	485		490		495
Thr Val Ser Arg	Asn Thr Leu Asp	505	Asn Val Pro Leu Gly Ala Gly Gln	510	
	500		515		520
Asn Glu Tyr Ala Ser Ile Leu Val Ser Ala Ala Gln Phe Ser Pro Leu			525		
	530		535		540
Ala Tyr Ile Pro Asn Pro Val Ser Leu Leu Glu Ile Ser Asp Gln Thr			545		550
	555		560		
Thr Lys Glu Arg Phe Leu Ala Thr Pro Phe Val Glu Ile Lys Pro Ile			565		570
	575		580		585
Asn Glu Leu Thr Leu Lys Ala Ser Phe Gly Ile Asp Arg Asn Tyr Gln			590		595
	600		605		
Arg Arg Glu Val Tyr Met Pro Lys Thr Thr Leu Tyr Gly Glu Lys Ala			610		615
	620		625		630
Asp Gly Arg Ala Asp Ile Gly Gln Tyr Asp Arg Ser Asp Tyr Leu Leu			635		640
	645		650		655
Glu Leu Thr Ala Asn Tyr Ala Lys Arg Leu Gly Asp His Asn Leu Asn			660		665
	670		675		680
Ala Leu Val Gly Tyr Ser Phe Gln Arg Phe Thr Ser Lys Tyr Leu Asn			685		690
	695		700		705
Ala Gly Asn Gln Gly Phe Leu Thr Asp Ala Phe Leu Phe Asn Asn Leu			710		715
	720		725		730
Gly Ala Gly Thr Tyr Glu Lys Pro Trp Val Gly Ser Ser Ala Ser Lys			735		740
	745		750		755
Ser Glu Met Ala Ser Phe Phe Gly Arg Val Asn Tyr Thr Tyr Lys Asp			760		765
	770		775		780
Arg Tyr Leu Val Thr Ala Thr Leu Arg Ala Asp Gly Ala Ser Asn Phe			785		790
	795		800		805
Ala Lys Asn Asn Arg Trp Gly Tyr Phe Pro Ser Val Ala Leu Gly Trp			810		815
	820		825		830
Arg Phe Thr Glu Glu Asn Phe Ala Arg Ser Leu Asn Leu Asp Lys Val			835		840
	845		850		855
Leu Ser Asn Gly Lys Leu Arg Leu Ser Tyr Gly Gln Thr Gly Asn Ser			860		865
	870		875		880
Asn Ile Gly Asp Lys Ser Val Thr Tyr Tyr Gly Thr Gly Tyr Asn Lys			885		890
	895		900		905
Val Phe Gly Asn Lys Glu Tyr Thr Gly Val Tyr Val Ser Gln Ile Gly			910		915
	920		925		
Asn Pro Asp Leu Lys Trp Glu Thr Thr Thr Glu Trp Asn Val Gly Leu					
Asp Leu Gly Phe Leu Asn Asn Arg Phe Asn Val Thr Ala Glu Tyr Phe					
His Lys Val Val Ser Asp Leu Leu Ser Ser Arg Ser Val Leu Ser Tyr					
Asn Glu Val Gly Ser Ile Ala Ala Asn Ile Gly Lys Thr Gln Ser Gln					
Gly Phe Glu Leu Thr Ile Asn Thr Lys Asn Phe Asp Thr Lys Asp Phe					
Ser Trp Asn Thr Asp Phe Thr Phe Ser Phe Tyr Arg Asp Lys Trp Lys					
Glu Arg Asp Glu Asn Trp Ser Pro Asn Pro Tyr Asp Met Tyr Asn Ala					
Pro Leu Arg Gly Tyr Tyr Met Tyr Leu Ser Asp Gly Leu Ile Gln Pro					

Gly Glu Glu Val Ser Trp Met Pro Gly Ala Leu Pro Gly Gln Val Lys
 930 935 940
 Leu Lys Asp Ile Asp Gly Tyr Ala Tyr Asn Glu Asp Gly Thr Tyr Lys
 945 950 955 960
 Thr Asp Lys His Gly Ile Pro Leu Arg Thr Gly Lys Pro Asp Gly Lys
 965 970 975
 Ile Asp Tyr Ala Asp Ala Val Phe Lys Gly Cys Ser Asp Pro Gly Tyr
 980 985 990
 Leu Leu Gly Leu Asn Asn Thr Phe Arg Tyr Lys Asn Phe Asp Leu Asn
 995 1000 1005
 Val Tyr Phe Tyr Gly Gln Leu Asp Leu Leu Lys Ser Gly Ser Tyr Lys
 1010 1015 1020
 Asp Tyr Trp Ile Val Gly Ser Gly Thr Met Thr Gly Val Asn Asn Leu
 1025 1030 1035 1040
 Tyr Arg Gly Tyr Asn Met Pro Thr Ser Ala Lys Glu Val Trp Ser His
 1045 1050 1055
 Asp Asn Thr Ser Gly Lys Met Pro Gly Tyr Phe Gln Tyr Met Ser Asn
 1060 1065 1070
 Tyr Gly Tyr Gly Asp Tyr Phe Leu Glu Lys Ser Trp Phe Ile Arg Cys
 1075 1080 1085
 Arg Asn Ile Thr Leu Gly Tyr Thr Leu Pro Val Lys Ser Ala Lys Lys
 1090 1095 1100
 Leu Val Ser Asn Val Arg Ile Tyr Ala Asp Val Asn Asn Leu Phe Thr
 1105 1110 1115 1120
 Ile Thr Pro Tyr Asp Gly Leu Asp Val Glu Thr Asp Asp Ser Tyr Trp
 1125 1130 1135
 Ala Tyr Pro Asn Val Arg Ser Phe Ser Ile Gly Leu Asp Ile Thr Phe
 1140 1145 1150

<210> 10028

<211> 222

<212> PRT

<213> B.fragilis

<400> 10028

Arg Ile Thr Lys Met Glu Ile Phe Arg Asn Leu Thr Val Val Leu Ala
 1 5 10 15
 Ile Thr Thr Leu Val Ala Cys Asn Asp Val Thr Ile Glu Gly Ser Trp
 20 25 30
 Val Glu Pro Val Pro Gly Ile Ser Asn Leu Lys Gln Gly Phe Thr Leu
 35 40 45
 Glu Ala Asn Gly Ser Ala Ser Ser Ile Asn Met Ala Thr Leu Lys Tyr
 50 55 60
 Glu Lys Trp Lys Lys Glu Gly Asn Leu Leu Leu Leu Ser Gly Ile Ser
 65 70 75 80
 Ile Gly Asn His Gln Ser Ile Ser Phe Thr Asp Thr Leu Thr Val Glu
 85 90 95
 Gln Leu Thr Gln Asp Ser Leu Ile Leu Lys Lys Gly Glu Leu Val Leu
 100 105 110
 Arg Tyr Ser Lys Thr Asn Glu Ile Pro Asp Glu Glu Ala Ile Pro Thr
 115 120 125
 Pro Asp Thr Pro Thr Gln Lys Leu Leu Ser Val Lys Gly Lys Leu Ile
 130 135 140
 Ile Gly His Glu Thr Arg Ser Phe Thr Ser Glu Gly Asp Ser Thr Asp
 145 150 155 160
 Tyr Trp Ile Val Asp Lys Thr Gly Glu Leu Leu Gln Lys Tyr Asp Gly
 165 170 175
 Glu Thr Lys Gly Ile Lys Asn Gly Thr Pro Val Tyr Val Glu Leu Glu
 180 185 190

Val	Ile	Asp	Met	Gly	Lys	Ser	Asp	Glu	Gly	Phe	Ala	Ala	Asp	Tyr	Ala
		195					200					205			
Gly	Val	Tyr	His	Val	Met	Lys	Ile	Asn	Lys	Ile	Thr	Val	Lys		
	210					215					220				

<210> 10029
 <211> 209
 <212> PRT
 <213> B.fragilis

<400> 10029

Cys	Ile	Met	Lys	Val	Asn	Asp	Ile	Asp	Met	Asp	Ala	Val	Ile	Leu	Gly
1				5					10					15	
Asn	Gly	Glu	Tyr	Pro	Thr	His	Ser	Met	Pro	Glu	Thr	Met	Leu	Ile	Met
			20					25					30		
Ala	Pro	Tyr	Val	Val	Cys	Cys	Asp	Gly	Ser	Ala	Asp	Glu	His	Ile	Arg
		35					40					45			
Arg	Gly	Phe	Thr	Pro	Asp	Ala	Ile	Ile	Gly	Asp	Gly	Asp	Ser	Leu	Ser
	50					55				60					
Pro	Glu	Asn	Lys	Glu	Arg	Phe	Arg	Thr	Ile	Phe	His	Gln	Ile	Asp	Asp
65					70					75				80	
Gln	Glu	Thr	Asn	Asp	Gln	Thr	Lys	Ala	Val	His	Phe	Leu	Leu	Asp	Gln
			85					90						95	
Gly	Lys	Lys	Thr	Ile	Ile	Leu	Val	Gly	Ala	Thr	Gly	Lys	Arg	Glu	Asp
			100					105					110		
His	Thr	Leu	Gly	Asn	Ile	Ser	Leu	Ile	Asp	Tyr	Met	Lys	Ala	Gly	
		115					120				125				
Ala	Gln	Val	Thr	Met	Leu	Thr	Asp	His	Gly	Met	Phe	Ile	Pro	Ala	Ser
		130				135					140				
Gly	Arg	Asn	Cys	Phe	Lys	Ser	Tyr	Pro	Gly	Gln	Gln	Ile	Ser	Ile	Phe
145					150					155				160	
Asn	Phe	Asn	Ala	Thr	Gly	Leu	Arg	Ala	Asp	Gly	Leu	Val	Tyr	Pro	Leu
			165						170					175	
Ser	Asp	Phe	Ser	Asn	Trp	Trp	Gln	Gly	Thr	Leu	Asn	Glu	Ala	Thr	Gly
			180					185					190		
Thr	Glu	Phe	Thr	Ile	His	Ala	Glu	Gly	Asp	Tyr	Leu	Val	Tyr	Leu	Asn
		195					200					205			

Tyr

<210> 10030
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 10030

Gly	Ser	Met	Asn	Thr	Ile	Cys	Lys	Met	Arg	Asp	Ile	Tyr	Lys	Ala	Leu
1				5					10					15	
Ser	Ile	Phe	Glu	Thr	Ala	Phe	Glu	Glu	Val	Tyr	Gly	Ile	Ser	Leu	Asn
			20					25					30		
Glu	Ala	Met	Val	Leu	Cys	Ala	Leu	Arg	Glu	Ala	Gly	Lys	Glu	Ile	Thr
		35					40					45			
Ser	Thr	Ala	Ile	Ala	Glu	Arg	Thr	Glu	Met	Ala	Pro	Ser	His	Thr	Ser
	50					55					60				
Lys	Val	Ile	Arg	Ala	Val	Glu	Asp	Lys	Gly	Leu	Ile	Arg	Arg	Ala	Leu
65					70					75				80	
Gly	Glu	Val	Asp	Lys	Arg	Gln	Met	Tyr	Phe	Ser	Leu	Thr	Glu	Ala	Gly
			85						90					95	
Lys	Lys	Arg	Leu	Asn	Glu	Leu	Asp	Leu	Asp	Lys	Val	Glu	Ile	Pro	Glu

100
Met Leu Lys Pro Leu Ile
115

105

110

<210> 10031
<211> 257
<212> PRT
<213> B.fragilis

<400> 10031

Arg Lys Lys Lys Phe Ile Met Lys Ile Cys Ser Cys Leu Asn Lys Gly
1 5 10 15
Val Met Ile Ala Val Ala Val Val Cys Ser Ala Gly Leu Gln Ser Cys
20 25 30
Leu Asp Asp Asn Asp Lys Tyr Tyr Tyr Val Glu Gly Phe Pro Asn Ala
35 40 45
Leu Val Thr Val Lys Asn Ala Thr Asp Gly Ser Phe Phe Leu Gln Leu
50 55 60
Asn Asp Ser Thr Thr Leu Leu Pro Thr Asn Met Ser Ser Ser Pro Phe
65 70 75 80
Gly Asp Lys Glu Val Arg Ala Leu Val Asn Tyr Asp Glu Val Ser Glu
85 90 95
Ser Gly Gly Arg Tyr Asp Lys Ala Val Gln Val Asn Trp Ile Asp Ser
100 105 110
Ile Leu Thr Lys Ser Ile Ala Pro Asp Leu Gly Ser Glu Asn Asp Val
115 120 125
Val Tyr Gly Thr Asp Pro Val Glu Ile Val Asn Asp Trp Val Thr Ile
130 135 140
Ala Glu Asp Gly Tyr Leu Thr Leu Arg Phe Arg Thr Lys Trp Gly Asp
145 150 155 160
Tyr Asn Lys Ala His Phe Val Asn Leu Leu Leu Gly Gln Asn Pro Ser
165 170 175
Asp Pro Tyr Glu Val Glu Phe Arg His Asn Ala Tyr Gly Asp Thr Tyr
180 185 190
Gly Thr Val Gly Asp Gly Leu Val Ala Phe Lys Leu Val Gly Leu Pro
195 200 205
Asp Thr Asn Gly Lys Thr Val Pro Leu Thr Leu Lys Trp Lys Ser Phe
210 215 220
Ser Gly Asp Lys Ser Ala Val Phe Asp Tyr Cys Thr Gln Lys Asn Val
225 230 235 240
Thr Pro Ala Lys Pro Ala Ile Val Ser Val Arg Ser Asn Leu Asn Leu
245 250 255
Lys

<210> 10032
<211> 290
<212> PRT
<213> B.fragilis

<400> 10032

Leu Lys Glu Lys Gly Val Asp Ser Ser Leu Asp Thr Ile Arg Asp Glu
1 5 10 15
Ile Ile Gly Met Asn Ile Phe Asn Ser Val Phe Val Asp Cys Thr Ala
20 25 30
Ser Pro Asp Ile Ala Ser Leu Tyr Lys Asp Phe Leu Gln His Asn Ile
35 40 45
Ser Val Val Ala Ala Asn Lys Ile Ala Ala Ser Ser Ala Tyr Glu Asn
50 55 60

Tyr Arg Glu Leu Lys Leu Ile Ala Arg Gln Arg Gly Val Lys Tyr Leu
 65 70 75 80
 Phe Glu Thr Asn Val Gly Ala Gly Leu Pro Ile Ile Asn Thr Ile Asn
 85 90 95
 Asp Leu Ile His Ser Gly Asp Lys Ile Leu Lys Ile Glu Ala Val Leu
 100 105 110
 Ser Gly Thr Leu Asn Tyr Ile Phe Asn Lys Ile Ser Ala Asp Val Pro
 115 120 125
 Phe Ser Arg Thr Ile Lys Met Ala Gln Glu Glu Arg Tyr Ser Glu Pro
 130 135 140
 Asp Pro Arg Ile Asp Leu Ser Gly Lys Asp Val Ile Arg Lys Leu Val
 145 150 155 160
 Ile Leu Ala Arg Glu Ala Gly Tyr Lys Leu Glu Gln Glu Asp Val Val
 165 170 175
 Lys Asn Leu Phe Val Pro Asn Asp Phe Phe Glu Gly Ser Leu Glu Asp
 180 185 190
 Phe Trp Lys Lys Val Pro Ser Leu Asp Ala Asp Phe Glu Ala Arg Arg
 195 200 205
 Lys Val Leu Glu Ser Glu Asn Lys His Trp Arg Phe Val Ala Lys Leu
 210 215 220
 Glu Asn Gly Lys Ala Ser Val Gly Leu Gln Glu Val Asp Arg Asn His
 225 230 235 240
 Pro Phe Tyr Gly Leu Glu Gly Ser Asn Asn Ile Ile Leu Leu Thr Thr
 245 250 255
 Glu Arg Tyr Lys Glu Tyr Pro Met Met Ile Gln Gly Tyr Gly Ala Gly
 260 265 270
 Ala Gly Val Thr Ala Ala Gly Val Phe Ala Asp Ile Met Ser Ile Ala
 275 280 285
 Asn Val
 290

<210> 10033

<211> 447

<212> PRT

<213> B.fragilis

<400> 10033

Pro Ala Arg Lys Pro Asp Ser Ser Gly Ala Leu Pro Gly Phe Glu Arg
 1 5 10 15
 Ala Pro Leu Trp Ile Ser Val Thr Gly Gly Ile Cys Ile Leu Thr Gly
 20 25 30
 Leu Val Leu Leu Val Trp Leu Pro Arg Ser Ile Asn Arg Pro Val Lys
 35 40 45
 Glu Leu Thr Cys Gly Ile Leu Glu Ile Ala Asn His Asn Tyr Glu Lys
 50 55 60
 Arg Leu Asp Met Arg Gly Tyr Glu Glu Phe Arg Glu Val Ser Asp Ser
 65 70 75 80
 Phe Asn Arg Met Ala Glu Lys Leu Thr Glu Tyr Arg Asp Ser Thr Leu
 85 90 95
 Ala Asp Ile Leu Ser Ala Lys Lys Phe Leu Glu Ala Val Val Asn Ser
 100 105 110
 Ile His Glu Pro Ile Ile Gly Leu Asn Thr Glu Arg Glu Ile Leu Phe
 115 120 125
 Ile Asn Asn Glu Ala Leu Asn Val Leu Asn Met Lys Arg Glu Asn Val
 130 135 140
 Ile Arg Lys Ser Ala Glu Leu Ser Leu Lys Asn Asp Leu Leu Arg
 145 150 155 160
 Arg Leu Ile Arg Glu Leu Val Thr Pro Gly Glu Lys Asn Glu Pro Leu
 165 170 175

Lys Ile Tyr Ala Asp Asn Lys Glu Ser Tyr Phe Gln Ala Ser Tyr Ile
 180 185 190
 Pro Ile Glu Asn Ala Ala Ala Glu Glu Gly Glu Ala Arg Asn Leu Gly
 195 200 205
 Asp Val Ile Leu Leu Lys Asn Ile Thr Glu Phe Lys Glu Leu Asp Ser
 210 215 220
 Ala Lys Thr Thr Phe Ile Ser Thr Ile Ser His Glu Leu Lys Thr Pro
 225 230 235 240
 Ile Ser Ala Ile Met Met Ser Leu Gln Leu Leu Glu Asp Lys Arg Val
 245 250 255
 Gly Ser Leu Asn Gly Glu Gln Glu Gln Leu Ser Lys Asn Ile Arg Asp
 260 265 270
 Asn Ser Gln Arg Leu Leu Asp Ile Thr Gly Glu Leu Leu Asn Met Thr
 275 280 285
 Gln Val Glu Ala Gly Lys Leu Gln Met Met Pro Lys Ile Thr Lys Pro
 290 295 300
 Ile Glu Leu Ile Glu Tyr Ala Ile Lys Ala Asn Gln Val Gln Ala Asp
 305 310 315 320
 Lys Phe Asn Ile Gln Ile Glu Val Asp Tyr Pro Gln Glu Lys Ile Pro
 325 330 335
 Lys Leu Phe Val Asp Ser Glu Lys Ile Ala Trp Val Leu Thr Asn Leu
 340 345 350
 Leu Ser Asn Ala Ile Arg Tyr Ser Lys Glu Asn Gly Arg Val Val Ile
 355 360 365
 Gly Val Arg His Lys Lys Glu Tyr Ile Glu Leu Tyr Val Gln Asp Phe
 370 375 380
 Gly Lys Gly Ile Asp Pro Arg Tyr His Gln Ser Ile Phe Asp Arg Tyr
 385 390 395 400
 Phe Arg Val Pro Gly Thr Lys Val Gln Gly Ser Gly Leu Gly Leu Ser
 405 410 415
 Ile Ser Lys Asp Phe Val Glu Ala His Gly Gly Thr Leu Thr Val Gln
 420 425 430
 Ser Glu Pro Gly Lys Gly Ser Cys Phe Val Ile Arg Leu Lys Ala
 435 440 445

<210> 10034

<211> 798

<212> PRT

<213> B.fragilis

<400> 10034

Ile Met Leu Phe Lys Arg Ile Arg Val Thr Ile Leu Leu Leu Gly Met
 1 5 10 15
 Leu Ser Phe Ser Leu Arg Val Ser Ala Gln Ile Val Leu Lys His Ser
 20 25 30
 Asp Trp Glu Trp Lys Ile Ser Glu Thr Gly Cys Ala Glu Gln Leu Ile
 35 40 45
 Phe Lys Gly Gly Lys Arg Asn Asp Thr Ile Pro Phe Phe Arg Glu Gly
 50 55 60
 Glu His Ala Gly Pro Ser Phe Tyr Ala Lys Arg Glu Gly Lys Glu Val
 65 70 75 80
 Arg Ala Ser Trp Ile Pro Asp Gly Tyr Ala Ser Tyr Arg Ser Glu Ile
 85 90 95
 Asp Gly Val Leu Cys Arg Ile Ser Tyr Ile Lys Asp His Gly Gln Pro
 100 105 110
 Ala Leu Arg Val Lys Leu Thr Asn Ser Pro Val Pro Tyr Gln Pro
 115 120 125
 Gln Lys Ala Gly Leu Lys Leu Gly Ile Asp Thr Tyr Met Asp Lys Phe
 130 135 140

Pro Asp Trp Phe Gly Lys Tyr Phe Pro Thr Leu Met Arg Asn Glu Lys
 145 150 155 160
 Thr His Phe Tyr Gly Tyr Leu Gln Thr Pro Ser Gly His Thr Leu Gly
 165 170 175
 Leu Val Ser Gln Gln Pro Val Ala Ser Trp Ser Val Asp Tyr Asn Leu
 180 185 190
 Gly Tyr Gln Asp Pro Val Pro Phe Trp Phe Met Gly His Arg Ile Glu
 195 200 205
 Ser Leu Asn Leu Asp Leu Leu Asn Glu Leu Pro Leu Pro Ala Arg His
 210 215 220
 Pro Gln Asn Leu Tyr Glu Leu Lys Gln Gly Glu Ser Lys Glu Trp Ile
 225 230 235 240
 Phe Thr Phe Val Asn Val Gly Asn Leu Asp Asn Leu Glu Arg Ala Ile
 245 250 255
 Ala Arg Val Ser Asp Ile Pro Leu Ile Asp Ile Arg Gln Thr Ser His
 260 265 270
 Ala Ala Arg Glu Glu Ala Ser Phe Thr Leu Thr Ala Asp Asn Pro Asn
 275 280 285
 Val Lys Val Thr Asn Asp Ala Gly Lys Glu Leu Pro Val Val Leu Thr
 290 295 300
 Lys Thr Lys Gly Asn Arg Trp Ile Gly Lys Val Arg Leu Glu Asp Ala
 305 310 315 320
 Gly Leu Tyr Thr Leu Ser Val Arg Ser Gly Asn Lys Val Ala Glu Ala
 325 330 335
 Ile Trp Thr Val His His Pro Trp Gln Trp Val Met Glu Lys Ala Arg
 340 345 350
 Glu Asn Ala Ala Arg Tyr His Gln Lys Pro Thr Ser His Ala Glu Ser
 355 360 365
 Trp Tyr Gly Phe Tyr Ser Ala Phe Leu Ala Ala Arg Tyr Phe Pro Asn
 370 375 380
 Glu Ser Leu Asp Lys Gln Leu Ser Asn Tyr Phe Asp Arg Leu Tyr Asn
 385 390 395 400
 Lys Leu His Asp Ser Val Lys Val Glu Pro Leu Tyr Phe Lys Thr Arg
 405 410 415
 Ile Gln Asn Thr Ser Thr Thr Ile Gly Met Leu Val Asp Lys Tyr Glu
 420 425 430
 Ala Gln Gly Asp Leu Glu Asp Leu Lys Lys Ala Ser Lys Leu Ala Asp
 435 440 445
 Trp Met Ile Ala Thr Ser Gln Arg Glu Asn Gly Ala Tyr Tyr Asn His
 450 455 460
 Gly Thr Val Tyr Thr Ser Val Ile Tyr Ile Ala Lys Ser Val Leu Glu
 465 470 475 480
 Leu Ala Val Leu Glu Arg Lys Leu Gly Glu Gln Asp Leu Phe Trp Arg
 485 490 495
 Thr Cys Ala Asp Arg His Phe Leu Ser Ala Lys Lys Ala Val Asp Gln
 500 505 510
 Leu Val Ala Ser Gln Gly Asp Phe Gln Thr Glu Gly Glu Leu Thr Phe
 515 520 525
 Glu Asp Gly Met Ile Ser Cys Ser Ala Leu Gln Ile Gly Met Met Gly
 530 535 540
 Val Ile Glu Gln Asp Ala Val Ala Arg Lys Tyr Tyr Thr Asp Ala Met
 545 550 555 560
 Leu Lys Ile Leu Asn Ser His Asp Cys Leu Thr Gln Leu Arg Val Pro
 565 570 575
 Asp Gly Arg Arg Gln Gly Thr Met Arg Tyr Trp Glu Ala Gln Tyr
 580 585 590
 Asp Val Gln Met Leu Pro Asn Met Phe Asn Ser Pro His Gly Trp Ser
 595 600 605
 Gly Trp Arg Ala Tyr Ala Thr Tyr Tyr Ala Tyr Leu Leu Thr Gly Asp

610	615	620
Glu Lys Trp Leu Glu Gln Thr Phe Asn Ala Met Gly Ala Phe Ala Asn		
625	630	635
Leu Ile Asp Tyr Lys Thr Gly Gln Leu Arg Trp Ala Phe Val Val Asp		
	645	650
Pro His Leu Glu Val Glu Gln Ala Cys Ser Ala Asp Thr Lys Leu Asp		
	660	665
Phe Ser Asp Leu Ser Phe Gly Asn Pro His Pro Lys Leu Tyr Asp Thr		
	675	680
Arg Lys Phe Val Ile Gly Glu Gln Tyr Val Asn Met Ile Ser Asp Trp		
	690	695
Gln Thr Val Asn Thr Gln Asp Asn Asp Val His Glu Leu Phe Lys Cys		
705	710	715
Ile Gly Glu Ala Val Leu Thr Asn Ala Phe Val Ile Glu Arg Pro Asn		
	725	730
Gly Glu Val Val Gly Tyr Asn Cys Arg Val Thr Arg Lys Gly Asn Thr		
	740	745
Leu Thr Val Lys Ala Asp Glu Lys Gln Ile Val Asn Leu His Cys Asn		
	755	760
Leu Lys His Ser Phe Ser Val Ser Phe Asp Gly Lys Thr Cys Ser Leu		
	770	775
Pro Glu Gly Tyr Cys Asp Trp Ala Phe Gly Gln Ser Gly Tyr		
785	790	795

<210> 10035

<211> 208

<212> PRT

<213> B.fragilis

<400> 10035

Lys Gln Asp Leu Arg Ser Pro Ser Glu Lys Tyr Ser Ile Met Asn Gln	
1	5
Phe Leu Asp Phe Asp Gln Lys Leu Tyr Ala Glu Leu Arg Lys Gly Ser	
	20
Glu His Ala Phe Val Thr Val Phe Glu Arg Tyr Asn Arg Leu Leu Tyr	
	35
Ala Leu Ala Tyr Arg Tyr Phe Lys Ser Gly Glu Glu Ala Glu Asp Ala	
	50
Val Gln Tyr Thr Phe Met Lys Leu Trp Glu Gln Arg Ser Ser Phe Glu	
65	70
Phe Gln Ser Gly Ile Arg Ser Leu Leu Phe Thr Ile Leu Lys Asn Tyr	
	85
Ile Met Asn Glu Leu Arg His Arg Gln Ile Val Phe Glu Lys His Tyr	
	100
Glu Met Ala Gln Arg Asn Glu Glu Ala Asp Asp Ser Phe Leu Lys Asn	
	115
Phe Glu Asp Lys Asp Phe Arg Glu His Leu Arg Thr Ala Ile Gly Lys	
	130
Leu Pro Pro Gln Lys Gln Lys Ile Cys Arg Leu Lys Ile Glu Lys Gly	
145	150
Leu Ser Asn Gln Glu Ile Ala Asp Glu Met His Ile Thr Val Pro Thr	
	165
Val Lys Ser His Tyr Thr Gln Ala Ile Lys Ile Leu Arg Ala Glu Ile	
	180
Glu Ser Leu Ile Val Leu Leu His Val Leu Trp Ile His Phe Leu Glu	
	195
	200
	205

<210> 10036

<211> 336

<212> PRT

<213> B.fragilis

<400> 10036

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Arg Lys Val Glu Met Lys Ile Asp Asp Ala Ile Ile Asp Lys Val Leu
1          5          10          15
Asn Asn Glu Ala Ser Val Glu Glu Ala Gly Leu Val Ala Glu Trp Phe
20          25          30
Ala Thr Glu Glu Gly Ser Glu Tyr Leu Ser Gly Arg Leu Glu Ser Glu
35          40          45
Ser Ala Arg Leu Thr Glu Glu Arg Ala Arg Glu Trp Leu Asp His Pro
50          55          60
Val Pro Glu Glu Arg Met Arg Glu Arg Phe Ile Gly Gln Ile Lys Pro
65          70          75          80
Glu Lys Lys Ile Val Ser Tyr Arg Arg Val Leu Ile Ala Ala Ala Val
85          90          95
Leu Ile Pro Phe Leu Phe Leu Ser Ile Ser Leu Trp Phe Leu Ala Asp
100         105         110
Arg Thr Gly Val Phe Ser Ala Thr Glu Tyr Ala Glu Leu Lys Val Pro
115         120         125
Cys Gly Glu Gln Met Gln Val Val Leu Gln Asp Gly Thr Val Ile Gln
130         135         140
Leu Asn Ser Asp Thr Arg Leu Arg Tyr Pro Lys Lys Phe Gly Leu Phe
145         150         155         160
Ser Arg Ser Val Glu Leu Trp Gly Glu Gly Phe Phe Val Val Ala Lys
165         170         175
Asp Lys Lys Arg Pro Phe Ile Ile Asp Leu Lys Gly Val Glu Val Lys
180         185         190
Val Thr Gly Thr Lys Phe Asn Val Lys Ala Tyr Pro Ser Glu Pro Asn
195         200         205
Val Trp Val Thr Leu Glu Glu Gly Gly Val Leu Leu Lys Asp Thr Lys
210         215         220
Asn Lys Glu Tyr Pro Leu Val Pro Gly Glu Ser Ala Glu Tyr Asn Arg
225         230         235         240
Thr Ser Gly Ile Cys Gln Ile Thr Lys Pro Asp Asp Met Ser Gln Ile
245         250         255
Ser Ser Trp Arg Ser Asn Ser Leu Asn Phe Tyr Leu Thr Pro Leu Arg
260         265         270
Asp Ile Ile Lys Val Met Glu Arg Gln Tyr Asp Val His Phe Val Val
275         280         285
Arg Asp Ser Thr Leu Leu Asn Asn Arg Phe Thr Leu Ser Thr Ser Lys
290         295         300
Val Asn Val Asp Asp Val Leu Arg Asp Leu Glu Ala Val Ser Trp Ile
305         310         315         320
Arg Phe Leu Gln Thr Glu Asp Gly Val Phe Glu Ile Gln Lys Glu Lys
325         330         335

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<210> 10037

<211> 401

<212> PRT

<213> B.fragilis

<400> 10037

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Asn Arg Tyr Glu Met Asn Gln Leu Ser Asp Arg Leu Asn Ser Leu Ser
1          5          10          15
Pro Ser Ala Thr Leu Ala Met Ser Gln Lys Ser Ala Glu Leu Lys Ala
20          25          30
Gln Gly Val Asp Val Ile Asn Leu Ser Val Gly Glu Pro Asp Phe Asn
35          40          45

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Thr	Pro	Asp	His	Ile	Lys	Glu	Ala	Ala	Lys	Lys	Ala	Val	Asp	Asp	Asn
50						55					60				
Phe	Ser	Arg	Tyr	Ser	Pro	Val	Pro	Gly	Tyr	Pro	Ala	Leu	Arg	Asn	Ala
65					70				75					80	
Ile	Val	Glu	Lys	Leu	Lys	Lys	Glu	Asn	Gly	Leu	Glu	Tyr	Thr	Ala	Ala
			85						90					95	
Gln	Ile	Ser	Cys	Ala	Asn	Gly	Ala	Lys	Gln	Ser	Val	Cys	Asn	Thr	Ile
		100						105					110		
Met	Val	Leu	Val	Asn	Pro	Gly	Asp	Glu	Val	Ile	Val	Pro	Ala	Pro	Tyr
	115						120					125			
Trp	Val	Ser	Tyr	Pro	Glu	Met	Val	Lys	Leu	Ala	Glu	Gly	Thr	Pro	Val
	130					135					140				
Ile	Val	Thr	Ala	Gly	Ile	Glu	Gln	Asp	Phe	Lys	Ile	Thr	Pro	Ala	Gln
145					150					155					160
Leu	Glu	Ala	Ala	Ile	Thr	Pro	Lys	Thr	Lys	Ala	Leu	Ile	Leu	Cys	Ser
				165					170					175	
Pro	Ser	Asn	Pro	Thr	Gly	Ser	Val	Tyr	Ser	Lys	Glu	Glu	Leu	Ala	Gly
		180						185					190		
Leu	Ala	Ala	Val	Leu	Ala	Lys	Tyr	Pro	Gln	Ile	Ile	Val	Val	Ala	Asp
	195						200					205			
Glu	Ile	Tyr	Glu	His	Ile	Asn	Tyr	Ile	Gly	Lys	His	Gln	Ser	Ile	Ala
	210					215					220				
Gln	Phe	Pro	Glu	Met	Lys	Asp	Arg	Thr	Val	Ile	Val	Asn	Gly	Val	Ser
225					230					235					240
Lys	Ala	Tyr	Ala	Met	Thr	Gly	Trp	Arg	Ile	Gly	Phe	Ile	Ala	Gly	Pro
			245						250					255	
Glu	Trp	Ile	Val	Lys	Ala	Cys	Asn	Lys	Leu	Gln	Gly	Gln	Tyr	Thr	Ser
	260						265					270			
Gly	Pro	Cys	Ser	Val	Ser	Gln	Lys	Ala	Ala	Glu	Ala	Ala	Tyr	Thr	Gly
	275						280				285				
Ser	Gln	Ala	Pro	Val	Glu	Glu	Met	Arg	Gln	Ala	Phe	Glu	Arg	Arg	Arg
	290					295				300					
Asp	Leu	Ile	Val	Lys	Leu	Ala	Lys	Glu	Val	Pro	Gly	Phe	Glu	Val	Asn
305					310					315					320
Val	Pro	Glu	Gly	Ala	Phe	Tyr	Leu	Phe	Pro	Lys	Cys	Ser	Ser	Phe	Phe
				325					330					335	
Gly	Lys	Ser	Ala	Gly	Asp	Arg	Lys	Ile	Glu	Asn	Ser	Asp	Asp	Leu	Ala
		340					345					350			
Met	Tyr	Leu	Leu	Glu	Asp	Ala	His	Val	Ala	Cys	Val	Gly	Gly	Thr	Ser
	355					360						365			
Phe	Gly	Ala	Pro	Glu	Cys	Ile	Arg	Met	Ser	Tyr	Ala	Thr	Ser	Asp	Glu
	370					375					380				
Asn	Ile	Val	Glu	Ala	Ile	Arg	Arg	Ile	Lys	Glu	Ala	Leu	Ala	Lys	Leu
385					390					395					400
Lys															

<210> 10038

<211> 527

<212> PRT

<213> B.fragilis

<400> 10038

Ile	Ser	Ile	Cys	Met	Lys	Val	Met	Lys	Phe	Gly	Gly	Thr	Ser	Val	Gly
1			5						10					15	
Ser	Val	Asn	Ser	Ile	Leu	Ser	Val	Lys	Lys	Ile	Val	Glu	Ser	Ala	Gly
		20						25				30			
Glu	Pro	Val	Ile	Val	Val	Val	Ser	Ala	Leu	Gly	Gly	Ile	Thr	Asp	Gln
	35						40					45			

Leu Ile Ser Thr Ser Arg Met Ala Ala Met Gly Asp Ala Ala Tyr Glu
 50 55 60
 Gly Ala Tyr Arg Glu Ile Val Arg Arg His Glu Glu Met Val Gln Gly
 65 70 75 80
 Val Ile Pro Ala Gly Glu Thr Gln Thr Leu Leu His Tyr Gln Val Asn
 85 90 95
 Glu Leu Leu Asp Glu Leu Lys Asp Ile Phe Gln Gly Ile Tyr Leu Ile
 100 105 110
 Lys Asp Leu Ser Pro Lys Thr Ser Asp Thr Ile Val Ser Tyr Gly Glu
 115 120 125
 Arg Leu Ser Ser Leu Ile Ala Ser Arg Leu Ile Gln Gly Ala Val Trp
 130 135 140
 Phe Asp Ser Arg Thr Phe Ile Lys Thr Glu Lys Lys His Asn Lys His
 145 150 155 160
 Asn Lys His Thr Leu Asp Thr Glu Leu Thr Asn Arg Leu Val Arg Glu
 165 170 175
 Ala Phe Lys Glu Ile Pro Arg Val Ser Leu Val Pro Gly Phe Ile Ser
 180 185 190
 Ser Asp Lys Val Ser Gly Asp Val Thr Asn Leu Gly Arg Gly Gly Ser
 195 200 205
 Asp Tyr Thr Ala Ala Val Ile Ala Ala Ala Leu Asp Ala Asp Ser Leu
 210 215 220
 Glu Ile Trp Thr Asp Val Asp Gly Phe Met Thr Ala Asp Pro Arg Val
 225 230 235 240
 Ile Ser Thr Ala Tyr Thr Ile Ser Glu Leu Thr Tyr Val Glu Ala Thr
 245 250 255
 Glu Leu Cys Asn Phe Gly Ala Lys Val Tyr Pro Pro Thr Ile Tyr
 260 265 270
 Pro Val Cys His Lys Asn Ile Pro Ile Leu Ile Lys Asn Thr Phe Asn
 275 280 285
 Pro Asp Ala Gln Gly Thr Val Ile Lys Gln His Val Asp His Thr Lys
 290 295 300
 Ser Lys Ala Ile Lys Gly Ile Ser Ser Ile Asn Asp Thr Ser Leu Ile
 305 310 315 320
 Thr Val Gln Gly Leu Gly Met Val Gly Val Ile Gly Val Asn Tyr Arg
 325 330 335
 Ile Phe Lys Ala Leu Ala Lys Asn Gly Ile Ser Val Phe Leu Val Ser
 340 345 350
 Gln Ala Ser Ser Glu Asn Ser Thr Ser Ile Gly Val Arg Asn Ala Asp
 355 360 365
 Ala Asp Leu Ala Cys Glu Val Leu Asn Glu Glu Phe Ala Lys Glu Ile
 370 375 380
 Glu Met Gly Glu Ile Ser Pro Ile Gln Ala Glu Lys Asn Leu Ala Thr
 385 390 395 400
 Val Ala Ile Val Gly Glu Asn Met Lys His Thr Pro Gly Ile Ala Gly
 405 410 415
 Lys Leu Phe Gly Thr Leu Gly Arg Asn Gly Ile Asn Val Ile Ala Cys
 420 425 430
 Ala Gln Gly Ala Ser Glu Thr Asn Ile Ser Phe Val Val Asp Ser Lys
 435 440 445
 Ser Leu Arg Lys Ser Leu Asn Val Ile His Asp Ser Phe Phe Leu Ser
 450 455 460
 Glu Tyr Gln Val Leu Asn Leu Phe Ile Cys Gly Val Gly Thr Val Gly
 465 470 475 480
 Gly Ser Leu Val Glu Gln Ile Arg Gln Gln Lys Lys Leu Met Val
 485 490 495
 Glu Asn Gly Leu Lys Leu His Val Val Gly Ile Ile Asp Ala Thr Lys
 500 505 510
 Ala Met Phe Ser Arg Ala Gly Phe Asp Leu Ala Asn Tyr Arg Glu

515

520

525

<210> 10039
 <211> 212
 <212> PRT
 <213> B.fragilis

<400> 10039

Ile	His	Arg	Leu	Met	Met	Asn	His	Gln	Pro	Glu	Ile	Ala	Ile	Val	Glu
1			5					10					15		
Ala	Asn	Thr	Leu	Thr	Ser	Leu	Gly	Leu	Lys	Thr	Ile	Leu	Glu	Arg	Met
		20					25					30			
Ile	Pro	Met	Ala	Val	Ile	Arg	Thr	Phe	His	Ser	Phe	Gly	Glu	Leu	Thr
	35					40					45				
Asp	Asp	Thr	Pro	Asp	Met	Tyr	Ala	His	Tyr	Phe	Ile	Ser	Ala	Gln	Ile
	50					55				60					
Tyr	Val	Glu	His	Asn	Ala	Phe	Phe	Leu	Pro	Arg	Lys	Arg	Lys	Thr	Ile
65				70					75					80	
Val	Leu	Ala	Gly	Asp	Ser	His	Gln	Phe	Gln	Leu	Ser	Gly	Val	Pro	Ile
			85				90						95		
Leu	Asn	Ile	Tyr	Gln	Ala	Glu	Glu	Gln	Leu	Val	Lys	Asp	Ile	Leu	Lys
		100					105					110			
Leu	His	Gln	His	Ala	His	His	Asp	Gly	Tyr	Pro	Val	Lys	Asp	Met	Pro
	115						120					125			
Pro	Thr	Pro	Pro	Thr	Thr	Gly	His	Glu	Leu	Ser	Ala	Arg	Glu	Ile	Glu
	130					135					140				
Val	Leu	Val	Leu	Ile	Thr	Lys	Gly	Leu	Ile	Asn	Lys	Glu	Ile	Ala	Asp
145				150					155					160	
Lys	Leu	Asn	Ile	Gly	Leu	Thr	Thr	Val	Ile	Thr	His	Arg	Lys	Asn	Ile
			165				170						175		
Thr	Glu	Lys	Leu	Gly	Ile	Lys	Ile	Gly	Leu	Gly	Pro	Asn	His	Leu	Cys
			180				185					190			
Gly	Asp	Glu	Arg	Val	Cys	Gly	Gly	Arg	Pro	His	Ile	Ala	Asn	Tyr	Val
	195					200						205			
Val	Asn	Pro	Trp												
	210														

<210> 10040
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 10040

Ser	Phe	Lys	Trp	Ile	Ile	Met	His	Ser	Glu	Ile	Ala	Glu	Glu	Lys	Leu
1			5					10					15		
Leu	Val	Ser	Gln	Phe	Ser	Gln	Gly	Ser	His	Ile	Ala	Phe	Lys	Ala	Leu
		20					25					30			
Phe	Met	Arg	Tyr	Tyr	Pro	Lys	Val	Arg	Ser	Phe	Ile	Met	Gly	Leu	Val
	35					40					45				
Lys	Ser	Glu	Ser	Glu	Ala	Glu	Asp	Leu	Thr	Gln	Glu	Val	Phe	Leu	Lys
	50					55				60					
Leu	Trp	Thr	His	Arg	Glu	Lys	Phe	Cys	Glu	Val	Glu	Val	Phe	Gly	Thr
65				70					75					80	
Tyr	Leu	Tyr	Val	Leu	Thr	Lys	Asn	Thr	Thr	Phe	Asn	Tyr	Leu	Arg	Ser
			85				90						95		
Arg	Gln	Asn	Arg	Gln	Asp	Ser	Gln	Gly	Thr	Glu	Trp	Val	Glu	Glu	Ser
		100					105					110			
Thr	Asp	Thr	Thr	Pro	Tyr	Glu	Glu	Leu	Val	Ala	Lys	Asp	Leu	Gln	Leu
	115					120						125			

Leu Ile Asp Met Val Val Glu Asn Met Pro Pro Gln Arg Gln Met Ile
 130 135 140
 Phe Arg Leu Asn Arg Glu Ala Gly Leu Thr Asn Ala Glu Ile Ala Glu
 145 150 155 160
 Lys Leu Gln Ile Ser Lys Lys Thr Val Glu Asn His Leu Asn Leu Ala
 165 170 175
 Leu Lys Glu Leu Lys Asn Ala Leu Leu Phe Phe Ile Phe Leu Tyr Leu
 180 185 190
 Cys

<210> 10041

<211> 486

<212> PRT

<213> B.fragilis

<400> 10041

Thr Gly Lys Cys His Leu Phe Ile Leu Ile Lys Gln Thr Lys Met Lys
 1 5 10 15
 Arg Arg Gln Ile Arg Lys Lys Asn Arg Ile Thr Lys Lys Asn Arg Glu
 20 25 30
 Met Lys Ile Tyr Lys Phe Gly Lys Ile Pro Thr Gly Ser Val Gln Gly
 35 40 45
 Met Lys Gly Met Leu Arg Leu Ile Asp Asn Ser Ile Pro Gln Ile Ile
 50 55 60
 Val Leu Ser Ala Thr Thr Glu Thr Thr Glu Arg Leu Ala Gly Ile Ala
 65 70 75 80
 Ala His Leu Phe Asn Arg Asp Thr Glu Gln Ala His Asp Glu Ile Ser
 85 90 95
 Arg Leu Glu Phe Arg Phe Ile Asp Phe Ala Asn Glu Leu Phe Asn Asp
 100 105 110
 Glu Ser Ile Lys Gln Gln Ala Val Asp Ser Ile Ile Asp Arg Phe Arg
 115 120 125
 Thr Leu Trp Asn Phe Thr Arg Gln Arg Phe Thr Ser Val Asp Glu Lys
 130 135 140
 Asp Ile Leu Ala Gln Gly Glu Phe Ile Ser Ser Met Leu Val Ser Leu
 145 150 155 160
 Tyr Leu Lys Glu Gln Gly Ile Asn Asn Arg Leu Leu Asn Ser Leu Asp
 165 170 175
 Phe Met Arg Leu Ala Pro Glu Glu Glu Pro Asp Met Glu Tyr Ile Gly
 180 185 190
 Thr Lys Leu His Leu Leu Leu Ala Glu His Lys Ser Thr Asn Val Phe
 195 200 205
 Leu Thr Gln Gly His Leu Cys Arg Asn Ala Tyr Asn Glu Thr Cys Tyr
 210 215 220
 Leu Lys Gln Gly Gly Asp Asp Val Ser Ala Thr Leu Ile Gly Ala Ala
 225 230 235 240
 Leu Gln Ala Gln Glu Val Cys Leu Trp Thr Asp Ser Lys Glu Leu His
 245 250 255
 Ser Cys Asp Pro Arg Phe Val Lys His Pro Ala Met Val Lys Gln Leu
 260 265 270
 Ser Phe Asp Glu Ala Glu Gln Leu Ala Tyr Cys Gly Trp Thr Gly Phe
 275 280 285
 Asn Pro His Cys Ile Leu Pro Ala Arg Glu Asn Asn Ile Pro Ile Arg
 290 295 300
 Leu Leu Cys Ser Met Glu Pro Ala Glu Gly Gly Thr Leu Ile Ser Asn
 305 310 315 320
 Ser Gln Ser Gly Glu Asn Ile Lys Ala Ile Thr Ala Arg Asp Asn Ile
 325 330 335

Tyr Tyr Ile Lys Phe Gln Ser Asn Arg Thr Leu Arg Pro Tyr Leu Phe
 340 345 350
 Ile Ser Lys Ile Phe Asp Thr Phe Ala Lys Tyr His Thr Ser Leu Cys
 355 360 365
 Leu Phe Ala Ser Ser Gly Ser Asp Val Ser Val Ala Ile Asn Asp Lys
 370 375 380
 Glu Arg Leu Ser His Ile Leu His Glu Leu Ser Arg Tyr Ala Val Thr
 385 390 395 400
 Val Val Lys Asp His Met Cys Ile Leu Ser Ala Ile Gly Asn Met Gln
 405 410 415
 Trp Gln Cys Ala Gly Phe Glu Ala Arg Ile Ile Asn Ala Leu Ala Thr
 420 425 430
 Ile Pro Ile Arg Met Ile Ser Tyr Gly Ser Asn Asn Asn Asn Val Ser
 435 440 445
 Leu Val Ile Arg Ala Glu Asp Lys Arg Glu Ala Leu Gln Arg Leu Asn
 450 455 460
 Asp Thr Leu Phe Ala Pro Cys His Ala Asn Pro Ser Gln Ile His Val
 465 470 475 480
 Pro Thr Leu Lys His Ser
 485

<210> 10042

<211> 234

<212> PRT

<213> B.fragilis

<400> 10042

Thr Asp Arg Cys Ile Gly Phe Ala Pro Ser Glu Pro Phe Asn Leu Trp
 1 5 10 15
 Val Arg Arg Ser Asp Cys Ser Leu Cys Arg Asn Gln Val Asn Arg Phe
 20 25 30
 Gly Cys Gln Phe Ile Leu Leu Asn Ile Gln Ala Met Lys Thr Leu Leu
 35 40 45
 Lys Ser Ile Lys Ile Thr Leu Val Phe Cys Val Phe Phe Ser Val Phe
 50 55 60
 Tyr Ile Leu Val Leu Trp Leu Phe Ala Gln Val Ala Gly Pro Asn Arg
 65 70 75 80
 Gly Asn Ala Glu Val Val Thr Leu Asn Gly Lys Val Val Gly Ala Ala
 85 90 95
 Asn Val Gly Gln Thr Phe Thr Glu Glu Lys Tyr Phe Trp Gly Arg Pro
 100 105 110
 Ser Cys Ala Gly Asp Gly Tyr Asp Ala Thr Ser Ser Ala Gly Ser Asn
 115 120 125
 Lys Gly Pro Thr Asn Pro Glu Tyr Leu Ala Glu Val Glu Ala Arg Ile
 130 135 140
 Asp Thr Phe Leu Ile His His Pro Tyr Leu Ala Arg Lys Asp Val Pro
 145 150 155 160
 Ala Glu Met Val Thr Ala Ser Ala Ser Gly Leu Asp Pro Asp Ile Thr
 165 170 175
 Pro Gln Ser Ala Tyr Val Gln Val Lys Arg Val Ala Gln Ala Arg Gly
 180 185 190
 Met Asp Val Glu Glu Val Arg Arg Val Val Asp Lys Ala Val Glu Lys
 195 200 205
 Pro Leu Leu Gly Ile Phe Gly Thr Glu Lys Val Asn Val Leu Lys Leu
 210 215 220
 Asn Ile Ala Leu Glu Glu Leu Lys Asn Arg
 225 230

<210> 10043

<211> 811
 <212> PRT
 <213> B.fragilis

<400> 10043

His	Phe	Leu	Leu	His	Leu	Cys	Lys	Arg	Ile	Asn	Glu	Lys	Ile	Gln	His
1				5					10					15	
Met	Lys	Lys	Asn	Ser	Ile	Leu	Ile	Ala	Leu	Ala	Leu	Phe	Ser	Ala	Gly
			20					25					30		
Gly	Thr	Trp	Ala	Glu	Glu	Leu	Pro	Lys	Asp	Thr	Leu	Lys	Val	Ile	Asp
		35					40					45			
Val	Glu	Glu	Ile	Val	Val	Ile	Ala	Ala	Pro	Lys	Glu	Asn	Arg	Lys	Leu
	50					55					60				
Arg	Glu	Gln	Pro	Thr	Ala	Val	Thr	Met	Leu	Ser	Gln	Gln	Asp	Met	Gln
65					70				75					80	
Ala	Asn	Gln	Val	Asn	Ser	Ile	Lys	Ser	Leu	Thr	Ala	Leu	Val	Pro	Asn
				85					90					95	
Ile	Phe	Ile	Pro	Asp	Tyr	Gly	Ser	Lys	Leu	Thr	Ser	Ala	Ile	Tyr	Ile
			100					105					110		
Arg	Gly	Ile	Gly	Ser	Arg	Ile	Asn	Thr	Pro	Ser	Val	Gly	Leu	Tyr	Val
		115					120					125			
Asp	Asn	Val	Pro	Tyr	Ile	Asp	Lys	Ser	Ala	Phe	Asp	Phe	Asn	Tyr	Ala
	130					135					140				
Asp	Ile	Glu	Arg	Ile	Asp	Val	Leu	Arg	Gly	Pro	Gln	Gly	Thr	Leu	Tyr
145					150					155				160	
Gly	Arg	Asn	Thr	Met	Gly	Gly	Leu	Ile	Lys	Val	His	Thr	Lys	Ser	Pro
				165					170					175	
Phe	Ser	Tyr	Gln	Gly	Thr	Asp	Leu	Arg	Leu	Ser	Ala	Gly	Thr	Tyr	Asp
			180				185						190		
Asn	Tyr	Asn	Ala	Ser	Val	Thr	His	Tyr	His	Arg	Met	Ser	Asn	Gln	Phe
		195					200					205			
Ala	Phe	Ser	Thr	Gly	Ala	Phe	Tyr	Glu	Tyr	Gly	Gly	Gly	Phe	Phe	Lys
	210					215					220				
Asn	Thr	Tyr	Leu	Asn	Lys	Lys	Ile	Asp	Lys	Ser	Gln	Ala	Ala	Gly	Gly
225					230					235				240	
Arg	Phe	Arg	Gly	Ile	Tyr	Leu	Pro	Ser	Glu	Asn	Met	Lys	Leu	Asp	Leu
				245					250					255	
Asn	Val	Ser	Tyr	Glu	Tyr	Ser	Asp	Gln	Gly	Gly	Tyr	Ala	Tyr	Gly	Ala
			260				265						270		
Tyr	Asp	Lys	His	Thr	Gly	Thr	Tyr	Leu	Lys	Pro	Ala	Tyr	Asn	Asp	Pro
	275						280					285			
Ser	Ser	Tyr	Tyr	Arg	Asn	Leu	Asn	Ala	Gly	Leu	Asn	Leu	Glu	Tyr	
	290					295				300					
Gln	Gly	Asp	His	Phe	Thr	Leu	Ser	Ser	Val	Thr	Gly	Leu	Gln	His	Leu
305					310					315				320	
Arg	Asp	Arg	Met	Phe	Ile	Asp	Gln	Asp	Phe	Ser	Pro	Ala	Asn	Ile	Tyr
				325					330					335	
Val	Leu	Glu	Gln	Lys	Gln	Lys	Leu	Thr	Thr	Ile	Ser	Glu	Glu	Ile	Val
			340					345					350		
Leu	Lys	Ser	Lys	Ser	Gly	Arg	Arg	Trp	Glu	Trp	Thr	Thr	Gly	Ala	Phe
		355					360					365			
Gly	Phe	Tyr	Gln	Trp	Leu	Thr	Thr	Asn	Gly	Pro	Val	Thr	Phe	Lys	Glu
	370					375				380					
Asp	Gly	Val	Thr	Glu	Met	Leu	Glu	Lys	Gly	Ile	Asn	Ser	His	Phe	Pro
385					390					395				400	
Asp	Leu	Ser	Ala	Met	Gly	Met	Lys	Met	Asn	Leu	Asp	Ile	Thr	Asn	Pro
				405					410					415	
Thr	Leu	Leu	Val	Asp	Gly	Arg	Phe	His	Thr	Pro	Ile	Leu	Ser	Gly	Ala
			420					425					430		

Val Tyr His Gln Ser Thr Phe Arg Asp Leu Leu Ile Glu Gly Leu Ser
 435 440 445
 Ala Thr Val Gly Leu Arg Leu Asp Tyr Glu Lys Asn Trp Met Lys Tyr
 450 455 460
 Asn Ser Gly Ser Thr Ile Asp Tyr Gln Phe Asn Met Thr Ser Pro Phe
 465 470 475 480
 Met Pro Val Arg Leu Glu Gln Thr Ser Ser Pro Arg Leu Asn Gly Lys
 485 490 495
 Phe Ser Asn Asp Tyr Leu Gln Leu Leu Pro Lys Phe Ala Leu Gln Tyr
 500 505 510
 Glu Trp Lys Lys Gly Asn Asn Val Tyr Ala Thr Val Ser Arg Gly Tyr
 515 520 525
 Arg Ser Gly Gly Tyr Asn Ile Gln Met Phe Ser Asp Leu Ile Gln Gly
 530 535 540
 Asn Met Gln Asn Asp Met Gln Gly Gln Ile Lys Ala Gly Thr Lys Gln
 545 550 555 560
 Ile Phe Asp Arg Leu Val Thr Gln Gly Met Pro Gln Ala Ile Ala Asp
 565 570 575
 Arg Ile Leu Ser Asn Ile Pro Asp Ala Gly Glu Asn Ala Asp Pro Lys
 580 585 590
 Ala Ser Thr Ile Tyr Lys Pro Glu Tyr Ser Trp Asn Tyr Glu Val Gly
 595 600 605
 Ser His Leu Thr Leu Trp Glu Gly Lys Leu Trp Met Asp Leu Ala Ala
 610 615 620
 Phe Leu Met Asp Thr Arg Asp Gln Gln Ile Ala Gln Phe Ala Lys Ser
 625 630 635 640
 Gly Leu Gly Arg Ile Thr Val Asn Ala Gly Lys Ser Arg Ser Tyr Gly
 645 650 655
 Ala Glu Ala Ala Leu Arg Ala Asn Leu Thr Asp Ala Leu Ser Met Asn
 660 665 670
 Ala Ser Tyr Gly Tyr Thr Tyr Ala Thr Phe Thr Asp Tyr Lys Thr Ile
 675 680 685
 Asp Arg Gly Gln Asn Glu Ile Ser Tyr Asp Gly Asn Tyr Val Pro Phe
 690 695 700
 Val Pro Lys His Thr Leu Asn Val Gly Gly Gln Tyr Ile Phe Arg Ile
 705 710 715 720
 Ala Pro Arg His Trp Leu Asp Arg Val Gln Val Asn Val Asn Tyr Asn
 725 730 735
 Gly Ala Gly Arg Ile Tyr Trp Thr Glu Gln Asn Asp Val Ser Gln Ser
 740 745 750
 Phe Tyr Gly Thr Leu Asn Ser Arg Val Ser Leu Ala Lys Gly Asn Gly
 755 760 765
 Gln Ile Asp Phe Trp Val Arg Asn Ala Leu Asp Lys Lys Tyr Ala Thr
 770 775 780
 Phe Tyr Phe Glu Ser Met Gly Asn Gly Phe Met Gln Lys Gly Arg Pro
 785 790 795 800
 Val His Phe Gly Val Asp Ile Arg Cys Arg Phe
 805 810

<210> 10044

<211> 385

<212> PRT

<213> B.fragilis

<400> 10044

Cys Pro Leu Leu Phe Leu Arg Ile Lys Arg Ile Thr Phe Leu Thr Leu
 1 5 10 15
 Cys Cys His Leu Gln Asp Ile Ser Leu Ser Leu Gln Gln Tyr Ile Leu
 20 25 30

His Leu Arg Thr Met Asn Pro Ser Asp Thr Ser Ile Leu Leu Ile Tyr
 35 40 45
 Thr Gly Gly Thr Ile Gly Met Ile Glu Asn Pro Glu Thr Gly Ala Leu
 50 55 60
 Glu Asn Phe Asn Phe Glu Gln Leu Gln Lys His Val Pro Glu Leu Gln
 65 70 75 80
 Lys Phe Thr Phe Pro Ile Asp Ser Tyr Gln Phe Asp Pro Pro Met Asp
 85 90 95
 Ser Ser Asp Met Glu Pro Glu Ala Trp Arg Lys Leu Leu His Val Ile
 100 105 110
 Ser Glu His Tyr His Gln Tyr Thr Gly Phe Val Ile Leu His Gly Thr
 115 120 125
 Asp Thr Met Ala Phe Thr Ala Ser Ala Leu Ser Phe Met Leu Glu Gly
 130 135 140
 Leu Asp Lys Pro Val Ile Leu Thr Gly Ser Gln Leu Pro Ile Gly Val
 145 150 155 160
 Leu Arg Thr Asp Gly Lys Glu Asn Leu Met Thr Ser Ile Glu Ile Ala
 165 170 175
 Ser Ala Arg Asp Arg Ser Gly Asn Pro Met Val Pro Glu Val Cys Ile
 180 185 190
 Phe Phe Glu Asn Arg Leu Met Arg Gly Asn Arg Thr Thr Lys Met Ser
 195 200 205
 Ala Glu Asn Phe Asn Ala Phe Arg Ser Phe Asn Tyr Pro Val Leu Ala
 210 215 220
 Glu Ala Gly Ile His Ile Lys Tyr Asn Asn Val Gln Ile His Ile Glu
 225 230 235 240
 Gly Glu Lys Arg Glu Leu His Pro His Tyr Leu Leu Asp Thr Asn Ile
 245 250 255
 Ala Ile Leu Lys Leu Phe Pro Gly Ile Gln Glu Asn Val Val Ala Ala
 260 265 270
 Thr Leu Ala Ile Glu Gly Leu Lys Ala Val Val Leu Glu Thr Tyr Gly
 275 280 285
 Ser Gly Asn Ala Ser Arg Lys Glu Trp Phe Leu Arg Arg Leu Arg Asp
 290 295 300
 Ala Ser Glu Arg Gly Val Val Ile Val Asn Val Thr Gln Cys Ser Ala
 305 310 315 320
 Gly Ser Val Glu Met Gly Arg Tyr Glu Thr Gly Tyr His Leu Leu Lys
 325 330 335
 Ala Gly Ile Val Ser Gly His Asp Ser Thr Thr Glu Ser Ala Val Thr
 340 345 350
 Lys Leu Met Phe Leu Leu Gly His Gly Tyr Ser Pro Asp Glu Val Arg
 355 360 365
 Arg Arg Met Asn Glu Ser Met Ala Gly Glu Ile Ser Ile Asp Leu Ser
 370 375 380
 Lys
 385

<210> 10045

<211> 836

<212> PRT

<213> B.fragilis

<400> 10045

Glu Thr Ile Leu Lys Arg Lys Tyr Ile Gln Met Lys Ile Ile Ile Ile
 1 5 10 15
 Gly Gly Val Ala Gly Gly Ala Thr Thr Ala Ala Arg Ile Arg Arg Ser
 20 25 30
 Asp Glu Thr Ala Glu Ile Ile Leu Leu Glu Lys Gly Lys Tyr Ile Ser
 35 40 45

Tyr	Ala	Asn	Cys	Gly	Leu	Pro	Tyr	Tyr	Ile	Gly	Asp	Val	Ile	Glu	Glu
50						55					60				
Arg	Glu	Lys	Leu	Phe	Val	Gln	Thr	Pro	Glu	Ala	Phe	Gly	Val	Arg	Phe
65					70					75					80
Arg	Val	Asp	Val	Arg	Thr	Glu	Asn	Glu	Val	Ile	Phe	Ile	Asp	Arg	Lys
				85					90					95	
Lys	Lys	Thr	Val	Thr	Val	Arg	Leu	Lys	Ser	Glu	Asp	Thr	Tyr	Glu	Glu
			100					105					110		
Ser	Tyr	Asp	Lys	Leu	Leu	Ile	Ser	Thr	Gly	Ala	Ser	Pro	Val	Arg	Pro
		115					120					125			
Pro	Leu	Pro	Gly	Ile	Asp	Ser	Thr	Gly	Ile	Phe	Thr	Leu	Arg	Asn	Val
		130					135				140				
Ala	Asp	Thr	Asp	Arg	Ile	Lys	Ala	Tyr	Val	Asn	Asn	Arg	Pro	Pro	Arg
145					150					155					160
Arg	Ala	Val	Val	Ile	Gly	Ala	Gly	Phe	Ile	Gly	Leu	Glu	Met	Ala	Glu
				165					170					175	
Asn	Leu	His	Ala	Leu	Gly	Ala	Gln	Val	Ser	Ile	Val	Glu	Met	Gly	Asn
			180					185					190		
Gln	Val	Met	Ala	Pro	Ile	Asp	Phe	Ser	Met	Ala	Ala	Leu	Val	His	Gln
		195					200					205			
His	Leu	Met	Glu	Lys	Gly	Val	Asn	Leu	Tyr	Leu	Glu	Gln	Ala	Val	Ala
		210					215				220				
Ser	Phe	Glu	Gln	Ala	Gly	Lys	Glu	Val	Lys	Val	Val	Phe	Lys	Asn	Gly
225					230					235					240
Gln	Ser	Ile	Leu	Ala	Asp	Ile	Val	Ile	Leu	Ser	Ile	Gly	Val	Arg	Pro
				245					250					255	
Glu	Thr	Thr	Leu	Ala	Arg	Ala	Ala	Glu	Leu	Thr	Ile	Gly	Glu	Ala	Gly
			260					265					270		
Gly	Ile	Ala	Val	Asn	Asp	Tyr	Leu	Gln	Thr	Ser	Asp	Glu	Ser	Ile	Tyr
		275					280					285			
Ala	Ile	Gly	Asp	Ala	Ile	Glu	Phe	Arg	His	Pro	Ile	Thr	Gly	Lys	Pro
		290					295				300				
Trp	Leu	Asn	Tyr	Leu	Ala	Gly	Pro	Ala	Asn	Arg	Gln	Gly	Arg	Ile	Val
305					310					315					320
Ala	Asp	Asn	Leu	Leu	Gly	Ala	Gln	Ile	Pro	Tyr	Glu	Gly	Ala	Ile	Gly
				325					330					335	
Thr	Ser	Ile	Ala	Lys	Val	Phe	Asp	Met	Thr	Val	Ala	Ser	Thr	Gly	Leu
			340					345					350		
Pro	Gly	Lys	Arg	Leu	Lys	Gln	Ala	Gly	Ile	Val	Tyr	Ala	Ser	Ser	Thr
		355					360					365			
Thr	His	Pro	Ala	Ser	His	Ala	Gly	Tyr	Tyr	Pro	Asp	Ala	Met	Pro	Met
		370					375				380				
Ser	Ile	Lys	Ile	Thr	Phe	Asp	Pro	Gln	Thr	Gly	Lys	Leu	Tyr	Gly	Gly
385					390					395					400
Gln	Ile	Val	Gly	Tyr	Asp	Gly	Val	Asp	Lys	Arg	Ile	Asp	Glu	Leu	Ser
				405					410					415	
Leu	Val	Ile	Lys	His	Glu	Gly	Thr	Ile	Tyr	Asp	Leu	Met	Lys	Val	Glu
			420					425					430		
Gln	Ala	Tyr	Ala	Pro	Pro	Phe	Ser	Ser	Ala	Lys	Asp	Pro	Val	Ala	Ile
		435					440					445			
Ala	Gly	Tyr	Val	Ala	Glu	Asn	Ile	Ile	Leu	Gly	Arg	Val	Lys	Pro	Val
		450				455				460					
Tyr	Trp	Arg	Asp	Leu	Arg	Asp	Ile	Glu	Leu	Lys	Asp	Val	Phe	Leu	Leu
465					470					475					480
Asp	Val	Arg	Thr	Pro	Asp	Glu	Phe	Ala	Leu	Gly	Ser	Leu	Pro	Gly	Ala
				485					490					495	
Val	Asn	Ile	Pro	Leu	Asp	Glu	Ile	Arg	Asp	Arg	Ile	Ala	Glu	Leu	Pro
			500					505				510			
Ser	Asn	Lys	Pro	Ile	Tyr	Thr	Phe	Cys	Ala	Val	Gly	Leu	Arg	Gly	Tyr

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515 520 525
 Leu Ala Tyr Arg Ile Leu Ile Gln His Gly Phe Lys Glu Val Tyr Asn
 530 535 540
 Leu Ser Gly Gly Leu Lys Thr Tyr Arg Ala Ala Thr Ala Pro Ile Ile
 545 550 555 560
 Leu His Glu Asn Glu Glu Thr Asp Asp Thr Pro Ser Ala Gln Asp Ser
 565 570 575
 Pro Ala Lys Pro Ser Val Thr Ala Glu Ala Pro Gln Thr Thr Ala
 580 585 590
 Ala Asn Pro Lys Thr Ile Arg Val Asp Ala Cys Gly Leu Gln Cys Pro
 595 600 605
 Gly Pro Val Leu Lys Met Lys Lys Thr Met Asp Thr Leu Val Pro Gly
 610 615 620
 Glu Arg Val Glu Ile Val Ala Thr Asp Pro Gly Phe Ser Arg Asp Ala
 625 630 635 640
 Ala Ala Trp Cys Asn Ser Thr Gly Asn Lys Phe Ile Ser Lys Asp Ser
 645 650 655
 Thr Gly Gly Lys Ser Val Val Val Ile Glu Lys Gly Glu Pro Gln Ala
 660 665 670
 Cys Asn Leu Thr Thr Thr Cys Asp Ser Lys Gly Lys Thr Leu Ile Met
 675 680 685
 Phe Ser Asp Asp Leu Asp Lys Ala Leu Ala Thr Phe Val Leu Ala Asn
 690 695 700
 Gly Ala Ala Ala Thr Gly Gln Lys Val Thr Ile Phe Phe Thr Phe Trp
 705 710 715 720
 Gly Leu Asn Val Ile Lys Lys Leu His Lys Pro Lys Val Glu Lys Asp
 725 730 735
 Ile Phe Gly Lys Met Phe Gly Thr Met Leu Pro Ser Ser Ser Leu Lys
 740 745 750
 Leu Lys Leu Ser Lys Met Ser Met Gly Gly Met Gly Gly Lys Met Met
 755 760 765
 Arg Tyr Ile Met His Arg Lys Gly Ile Asp Ser Leu Glu Ser Leu Arg
 770 775 780
 Gln Gln Ala Leu Glu Asn Gly Val Glu Phe Ile Ala Cys Gln Met Ser
 785 790 795 800
 Met Asp Val Met Gly Val Lys Arg Glu Glu Leu Leu Asp Glu Val Thr
 805 810 815
 Val Gly Gly Val Ala Thr Tyr Met Glu Arg Ala Asp Asn Ala Asn Ile
 820 825 830
 Asn Leu Phe Ile
 835

<210> 10046

<211> 340

<212> PRT

<213> B.fragilis

<400> 10046

Ile Ser Gly Arg Met Ser Tyr Leu Lys Asn Ile Ile Thr Tyr Phe Phe
 1 5 10 15
 His His Pro Ala Ser Asp Gly Val Val Glu Arg Val His Gln Arg Leu
 20 25 30
 Ala Asp Thr Asn Ser Gly Gln Glu Lys Glu Glu Val Leu Ser Gly Ile
 35 40 45
 Trp Glu Gln Ile Gly Phe Pro Gln Ala Asp Glu His Gln Thr Leu Arg
 50 55 60
 Ala Phe Glu Lys Leu Glu Gln Gln Ile Gly Gly Asp Ser Leu Lys Ser
 65 70 75 80
 Glu Ser Ser Phe Ser Arg Phe Arg Ile Pro Arg Trp Ser Trp Ile Ala

				85				90					95
Ala	Ser	Ile	Ile	Val	Pro	Leu	Leu	Leu	Leu	Phe	Gly	Ser	Ala
			100					105					110
Tyr	Lys	Glu	Thr	Leu	Ile	Ile	Lys	Asn	Glu	Leu	Ser	Asn	Val
		115					120					125	Thr
Ile	Gln	Tyr	Tyr	Val	Ser	Asn	Gly	Lys	Arg	Glu	Gln	Val	Thr
	130					135					140	Leu	Pro
Asp	Arg	Ser	Lys	Val	Trp	Leu	Asn	Ser	Gly	Ser	Leu	Leu	Ile
145				150					155				160
Ser	Ala	Phe	Ile	Gly	Asn	Glu	Arg	Glu	Val	Tyr	Leu	Ala	Gly
			165					170					175
Tyr	Phe	Ser	Val	Thr	Lys	Asp	Lys	Glu	Cys	Pro	Phe	Ile	Val
			180				185					190	Lys
Asn	Ser	Val	Ser	Val	Ser	Val	Leu	Gly	Thr	Glu	Phe	Asn	Ile
	195					200					205	Asn	Ala
Tyr	Pro	Asn	Ile	Asp	Lys	Val	Val	Thr	Thr	Leu	Glu	Glu	Gly
	210					215					220	Ser	Ile
Arg	Met	Ser	Leu	Asn	Arg	Phe	Asp	Ser	Ser	Tyr	Leu	Leu	Glu
225				230					235				240
Asp	Gln	Ile	Val	Tyr	Ile	Pro	Ser	Thr	Gly	His	Ile	Glu	Arg
			245						250				255
Val	Lys	Ala	Ser	Asp	Tyr	Ser	Asp	Trp	Arg	Gly	Gly	Gly	Leu
		260						265				270	Tyr
Ser	Asn	Ser	Pro	Phe	Lys	Glu	Val	Ile	Gln	Thr	Ile	Glu	Arg
	275					280					285	Thr	Tyr
Ser	Val	Gln	Val	His	Leu	Gln	Thr	Ser	Ile	Tyr	Gln	Ser	Asn
	290				295					300		Asn	Leu
Thr	Ile	His	Phe	Tyr	Pro	Asn	Glu	Ser	Ile	Glu	Asn	Ile	Met
305					310					315		Met	Leu
Ile	Lys	Glu	Met	Ile	Pro	Gly	Leu	Glu	Tyr	Gln	Ile	Glu	Gly
			325					330				335	Lys
													Asp
Ile	Tyr	Ile	Asp										
			340										

<210> 10047

<211> 511

<212> PRT

<213> B.fragilis

<400> 10047

Tyr	Trp	Ser	Gly	Tyr	Tyr	Phe	Leu	Ser	Asn	Lys	Lys	Ile	Lys	Asn	Asp
1				5					10					15	
Met	Lys	Lys	Ile	Ile	Tyr	Ile	Phe	Ser	Leu	Phe	Ile	Thr	Val	Ile	Gly
			20					25					30		
Leu	Leu	Gly	Ser	Cys	Ile	Asn	Leu	Glu	Ser	Glu	Ser	Tyr	Asp	Ser	Ile
		35				40						45			
Asn	Thr	Thr	Ile	Phe	Pro	Thr	Asn	Ala	Asp	Asp	Ala	Asp	Ala	Leu	Val
	50					55					60				
Ile	Ala	Ala	Ala	Tyr	Gly	Pro	Phe	Arg	Ala	Asp	Gly	Tyr	Ser	Gly	Leu
65					70					75				80	
Phe	Gln	Cys	Ala	Lys	Gly	Gly	Leu	Ala	Ser	Asn	Thr	Asp	Met	Ser	Thr
				85					90					95	
Asp	Leu	Leu	Asp	Cys	Lys	Trp	Gly	Asp	Ser	Trp	Trp	Pro	Ala	Val	Leu
			100					105					110		
Gln	Leu	Asn	Phe	Thr	Ala	Thr	Ser	Asp	Ile	Pro	Thr	Ser	Phe	Tyr	Gly
		115					120					125			
Thr	Trp	Ala	Asn	His	Ile	Gly	Lys	Met	Thr	Leu	Thr	Leu	Asp	Arg	Ile
	130					135					140				
Ser	Gly	Ile	Asp	Met	Lys	Glu	Glu	Glu	Lys	Thr	Arg	Leu	Ile	Ala	Glu

145 150 155 160
 Thr Arg Cys Gly Arg Gly Trp Leu Ala Tyr Ile Leu Tyr Asp Leu Tyr
 165 170 175
 Gly Pro Ile Gln Ile Pro Ser Leu Glu Val Leu Gln Asn Pro Thr Gln
 180 185 190
 Lys Val Ile Val Pro Arg Ser Ser Lys Glu Glu Thr Val Lys Leu Ile
 195 200 205
 Glu Asp Asp Leu Lys Ala Ala Glu Val Leu Pro Ala Lys Tyr Ser
 210 215 220
 Lys Ser Asp Glu Asn Phe Gly Arg Phe Thr Lys Gly Leu Ala Tyr Thr
 225 230 235 240
 Val Leu Met Lys Leu Tyr Met His Glu Lys Glu Trp Gly Lys Ala Val
 245 250 255
 Glu Cys Gly Arg Glu Val Met Lys Cys Gly Tyr Ser Leu Val Thr Asn
 260 265 270
 Tyr Lys Asp Ile Phe Thr Leu Asp Asn Glu Gly Asn Asp Glu Met Ile
 275 280 285
 Phe Ser Cys Ile Glu Thr Arg Gly Val Asn Glu Gln Met Trp His Ala
 290 295 300
 His Val Leu Pro Ser Asn Tyr Pro Thr Thr Asn Pro Asn Ile Gln Lys
 305 310 315 320
 Trp Asn Gly Tyr Arg Met Pro Trp Gln Phe Tyr His Ser Phe Asp Pro
 325 330 335
 Lys Asp Lys Arg Leu Glu Val Ile Cys Ser Glu Tyr Val Gly Thr Asp
 340 345 350
 Gly Val Thr Tyr Asn Glu Thr Asn Pro Gly Glu Tyr Leu Asp Lys Gly
 355 360 365
 Ala Leu Pro Ile Lys Tyr Gly Glu Asp Leu Thr Gln Thr Ser Glu Asn
 370 375 380
 Ser Glu Val Asp Val Val Val Tyr Arg Tyr Ala Asp Val Leu Thr Leu
 385 390 395 400
 Met Ala Glu Ala Leu Ala Arg Ser Asn Asn Ala Val Thr Gln Glu Ala
 405 410 415
 Val Asp Arg Leu Asn Asp Val His Thr Arg Ala Gly Leu Ala Ala Tyr
 420 425 430
 Gln Leu Ser Asp Phe Thr Ser Leu Asp Asp Phe Leu Arg Ala Val Leu
 435 440 445
 Lys Glu Arg Gly His Glu Leu Trp Gly Glu Gly Cys Arg Arg Ser Asp
 450 455 460
 Leu Ile Arg Tyr Gly Leu Tyr Ile Asp Tyr Ala Ile Lys Tyr Lys Gly
 465 470 475 480
 Ser Thr Thr Ala Lys Glu Tyr Met Asn Leu Met Pro Leu Pro Gln Ser
 485 490 495
 Val Ile Thr Glu Ser Ser Gly Gln Val Ile Gln Asn Glu Gly Tyr
 500 505 510

<210> 10048

<211> 451

<212> PRT

<213> B.fragilis

<400> 10048

Asn Ser Val Gly Leu Cys Gly Ala Pro Thr Pro Lys Pro Phe Ile Lys
 1 5 10 15
 Ile Pro Met Lys Tyr Tyr Ser Thr Asn Lys Gln Ala Pro Leu Ala Ser
 20 25 30
 Leu Glu Glu Ala Val Val Lys Gly Leu Ala Ser Asp Lys Gly Leu Phe
 35 40 45
 Met Pro Met Thr Ile Lys Pro Leu Pro Gln Glu Phe Tyr Asp Glu Ile

50		55		60
Glu Asn Leu Ser Phe Arg	Glu Ile Ala Tyr Arg	Val Ala Asp Ala Phe		
65	70	75	80	
Phe Gly Glu Asp Val Pro	Ala Glu Thr Leu Lys	Glu Ile Val Tyr Asp		
	85	90	95	
Thr Leu Asn Phe Asp Val	Pro Leu Val Pro Val	Lys Glu Asn Ile Tyr		
	100	105	110	
Ser Leu Glu Leu Phe His	Gly Pro Thr Leu Ala	Phe Lys Asp Val Gly		
	115	120	125	
Gly Arg Phe Met Ala Arg	Leu Glu Gly Tyr Phe	Ile Arg Lys Glu Gly		
	130	135	140	
Arg Lys Gln Val Asn Val	Leu Val Ala Thr Ser	Gly Asp Thr Gly Ser		
145	150	155	160	
Ala Val Ala Asn Gly Phe	Leu Gly Val Glu Gly	Ile His Val Tyr Val		
	165	170	175	
Leu Tyr Pro Lys Gly Lys	Val Ser Glu Ile Gln	Glu Lys Gln Phe Thr		
	180	185	190	
Thr Leu Gly Arg Asn Ile	Thr Ala Leu Glu Val	Asp Gly Thr Phe Asp		
	195	200	205	
Asp Cys Gln Ala Leu Val	Lys Ala Ala Phe Met	Asp Gln Glu Leu Asn		
210	215	220		
Glu Gln Leu Leu Leu Thr	Ser Ala Asn Ser Ile	Asn Val Ala Arg Phe		
225	230	235	240	
Leu Pro Gln Ala Phe Tyr	Tyr Phe Tyr Ala Tyr	Ala Gln Leu Lys Lys		
	245	250	255	
Ala Gly Arg Ala Glu Asn	Val Val Ile Cys Val	Pro Ser Gly Asn Phe		
	260	265	270	
Gly Asn Ile Thr Ala Gly	Leu Phe Gly Lys Lys	Met Gly Leu Pro Val		
	275	280	285	
Arg Arg Phe Ile Ala Ala	Asn Asn Lys Asn Asp	Ile Phe Tyr Gln Tyr		
	290	295	300	
Leu Gln Thr Gly Gln Tyr	Asn Pro Arg Pro Ser	Val Ala Thr Ile Ala		
305	310	315	320	
Asn Ala Met Asp Val Gly	Asp Pro Ser Asn Phe	Ala Arg Val Leu Asp		
	325	330	335	
Leu Tyr Gly Gly Ser His	Ala Ala Ile Ala Ala	Glu Ile Ser Gly Thr		
	340	345	350	
Thr Tyr Thr Asp Glu Gln	Ile Arg Glu Ser Val	Lys Ala Cys Trp Gln		
	355	360	365	
Gln Thr Gly Tyr Leu Leu	Asp Pro His Gly Ala	Cys Gly Tyr Arg Ala		
	370	375	380	
Leu Glu Glu Gly Leu Gln	Pro Gly Glu Thr Gly	Val Phe Leu Glu Thr		
385	390	395	400	
Ala His Pro Ala Lys Phe	Leu Gln Thr Val Glu	Ser Ile Ile Gly Thr		
	405	410	415	
Glu Val Glu Ile Pro Ala	Lys Leu Arg Ala Phe	Met Lys Gly Glu Lys		
	420	425	430	
Lys Ser Leu Pro Met Thr	Lys Glu Phe Ala Asp	Phe Lys Ser Tyr Leu		
	435	440	445	
Leu Gly Lys				
450				

<210> 10049

<211> 462

<212> PRT

<213> B.fragilis

<400> 10049

Asp Leu Phe Ile Lys Arg Ser Met Ala Lys Glu Lys Thr Val Tyr Val

1		5		10		15									
Cys	Ser	Asn	Cys	Gly	Gln	Glu	Ser	Pro	Lys	Trp	Val	Gly	Lys	Cys	Pro
		20						25					30		
Ser	Cys	Gly	Glu	Trp	Asn	Thr	Tyr	Val	Glu	Glu	Ile	Val	Arg	Lys	Glu
		35					40					45			
Val	Pro	Asn	Lys	Arg	Pro	Val	Ser	Gly	Ile	Glu	Ser	Pro	Lys	Ala	Lys
		50				55					60				
Pro	Val	Thr	Leu	Ser	Glu	Ile	Glu	Ala	Asp	Glu	Glu	Pro	Arg	Ile	Asp
65					70				75						80
Met	His	Asp	Glu	Glu	Leu	Asn	Arg	Val	Leu	Gly	Gly	Gly	Leu	Val	Pro
			85					90					95		
Gly	Ser	Leu	Val	Leu	Ile	Gly	Gly	Glu	Pro	Gly	Ile	Gly	Lys	Ser	Thr
		100						105					110		
Leu	Val	Leu	Gln	Thr	Val	Leu	His	Met	Pro	Glu	Arg	Arg	Ile	Leu	Tyr
		115					120					125			
Ile	Ser	Gly	Glu	Glu	Ser	Ala	Arg	Gln	Leu	Lys	Leu	Arg	Ala	Asp	Arg
		130				135					140				
Leu	Thr	Arg	Thr	Ser	Ser	Asp	Cys	Leu	Ile	Val	Cys	Glu	Thr	Ser	Leu
145					150					155					160
Glu	Gln	Ile	Tyr	Val	His	Ile	Lys	Asn	Thr	Arg	Pro	Asp	Leu	Val	Ile
			165					170					175		
Ile	Asp	Ser	Ile	Gln	Thr	Ile	Ser	Thr	Glu	Ser	Ile	Glu	Ser	Ser	Pro
		180						185					190		
Gly	Ser	Ile	Ala	Gln	Val	Arg	Glu	Cys	Ser	Ala	Ser	Ile	Leu	Arg	Phe
		195					200				205				
Ala	Lys	Glu	Thr	His	Thr	Pro	Val	Leu	Leu	Ile	Gly	His	Ile	Asn	Lys
		210				215					220				
Glu	Gly	Ser	Ile	Ala	Gly	Pro	Lys	Val	Leu	Glu	His	Ile	Val	Asp	Thr
225					230					235					240
Val	Leu	Gln	Phe	Glu	Gly	Asp	Gln	His	Tyr	Met	Tyr	Arg	Ile	Leu	Arg
			245					250					255		
Ser	Ile	Lys	Asn	Arg	Phe	Gly	Ser	Thr	Ala	Glu	Leu	Gly	Ile	Tyr	Glu
			260					265					270		
Met	Arg	Gln	Asp	Gly	Leu	Arg	Gln	Val	Ser	Asn	Pro	Ser	Glu	Leu	Leu
		275					280					285			
Leu	Ser	Gln	Asp	His	Glu	Gly	Met	Ser	Gly	Val	Ala	Ile	Ala	Ser	Ala
		290				295					300				
Ile	Glu	Gly	Val	Arg	Pro	Phe	Leu	Ile	Glu	Thr	Gln	Ala	Leu	Val	Ser
305					310					315					320
Ser	Ala	Val	Tyr	Gly	Asn	Pro	Gln	Arg	Ser	Ala	Thr	Gly	Phe	Asp	Ile
			325					330					335		
Arg	Arg	Met	Asn	Met	Leu	Leu	Ala	Val	Leu	Glu	Lys	Arg	Val	Gly	Phe
			340					345					350		
Lys	Leu	Ala	Gln	Lys	Asp	Val	Phe	Leu	Asn	Ile	Ala	Gly	Gly	Leu	Lys
		355					360					365			
Val	Asn	Asp	Pro	Ala	Ile	Asp	Leu	Ala	Val	Ile	Ser	Ala	Ile	Leu	Ser
		370				375					380				
Ser	Asn	Met	Asp	Ala	Ala	Ile	Glu	Pro	Glu	Val	Cys	Met	Ala	Gly	Glu
385					390					395					400
Ile	Gly	Leu	Ser	Gly	Glu	Ile	Arg	Pro	Val	Asn	Arg	Ile	Glu	Gln	Arg
			405					410					415		
Ile	Gly	Glu	Ala	Glu	Lys	Leu	Gly	Phe	Lys	Arg	Phe	Ile	Leu	Pro	Lys
		420					425						430		
Tyr	Asn	Met	Gln	Gly	Ile	Asp	Thr	Lys	Lys	Leu	Arg	Ile	Glu	Leu	Val
		435				440						445			
Pro	Val	Arg	Lys	Val	Glu	Glu	Ala	Phe	Arg	Thr	Leu	Phe	Gly		
		450				455					460				

<211> 305
 <212> PRT
 <213> B.fragilis

<400> 10050

Asn Cys Ile Ile Met Leu Leu Phe Gln Thr Thr Gln Gln Val Ala Asp
 1 5 10 15
 Ser Leu Gln Val Ala Ala Glu Lys Leu Asp Gln Ala Ile Ala Gln Ala
 20 25 30
 Asp Gly Leu Asp Lys Leu Gly Leu Ile Thr Gln Gln Leu Ile Asp Ser
 35 40 45
 Gly Ile Gln Ala Gly Gly His Ile Leu Lys Ala Val Ile Val Phe Leu
 50 55 60
 Val Gly Arg Phe Leu Ile Arg Met Leu Asn Arg Leu Val Gly Arg Val
 65 70 75 80
 Met Asp Lys Arg Asn Val Asp Ile Ser Ile Lys Thr Phe Val Lys Ser
 85 90 95
 Leu Val Asn Ile Leu Leu Thr Val Leu Leu Ile Val Ser Val Val Gly
 100 105 110
 Ala Leu Gly Val Glu Thr Thr Ser Phe Ala Ala Leu Leu Ala Ser Ala
 115 120 125
 Gly Val Ala Val Gly Met Ala Leu Ser Gly Asn Leu Gln Asn Phe Ala
 130 135 140
 Gly Gly Leu Val Ile Leu Leu Phe Lys Pro Tyr Lys Val Gly Asp Trp
 145 150 155 160
 Ile Glu Ala Gln Ser Val Ser Gly Thr Val Lys Glu Ile Gln Ile Phe
 165 170 175
 His Thr Ile Leu Thr Thr Ala Asp Asn Lys Leu Ile Tyr Val Pro Asn
 180 185 190
 Gly Ala Leu Ser Ser Gly Val Val Thr Asn Tyr Ser Asn Gln Lys Thr
 195 200 205
 Arg Arg Val Glu Trp Ile Phe Gly Val Asp Tyr Gly Glu Asp Tyr Asn
 210 215 220
 Lys Val Glu Lys Val Val Arg Glu Val Leu Thr Ala Asp Lys Arg Ile
 225 230 235 240
 Leu Asn Asp Pro Ala Pro Phe Ile Ala Leu His Ala Leu Asp Ala Ser
 245 250 255
 Ser Val Asn Val Val Val Arg Val Trp Val Glu Ser Gly Asp Tyr Trp
 260 265 270
 Gly Val Tyr Phe Asp Ile Asn Lys Thr Ile Tyr Ala Thr Phe Asn Glu
 275 280 285
 Lys Gly Ile Asn Phe Pro Phe Pro Gln Leu Thr Val His Gln Ala Pro
 290 295 300
 Asn
 305

<210> 10051
 <211> 489
 <212> PRT
 <213> B.fragilis

<400> 10051

Met Asn Ile Met Asn Gln Lys Leu Leu Leu Gly Ser Ala Leu Leu Val
 1 5 10 15
 Gly Met Ala Ser Thr Gln Gln Ala Leu Ala Arg Gln Lys Lys Ala Lys
 20 25 30
 Glu Gln Thr Arg Pro Asn Val Val Phe Ile Leu Ala Asp Asp Leu Gly
 35 40 45
 Tyr Gly Asp Leu Ser Cys Tyr Gly Gln Glu Lys Phe Glu Thr Pro Asn

50		55		60											
Ile	Asp	Arg	Leu	Ala	Gln	Asn	Gly	Met	Arg	Phe	Thr	Gln	Cys	Tyr	Ser
65					70					75					80
Gly	Thr	Thr	Val	Ser	Ala	Pro	Ser	Arg	Ser	Cys	Leu	Ile	Thr	Gly	Thr
				85					90					95	
His	Ser	Gly	His	Thr	Ala	Ile	Arg	Gly	Asn	Lys	Glu	Leu	Ala	Pro	Glu
			100					105					110		
Gly	Gln	Phe	Pro	Leu	Pro	Glu	Asn	Ser	Gln	Thr	Ile	Phe	Asn	Asp	Phe
		115					120					125			
Arg	Asn	Ala	Gly	Tyr	Arg	Thr	Gly	Ala	Phe	Gly	Lys	Trp	Gly	Leu	Gly
	130					135					140				
Tyr	Ile	Gly	Ser	Ala	Gly	Asp	Pro	Tyr	Lys	Gln	Gly	Ile	Asp	Gln	Phe
145					150					155					160
Tyr	Gly	Tyr	Asn	Cys	Gln	Leu	Leu	Ala	His	Ser	Tyr	Tyr	Pro	Asp	His
			165						170					175	
Leu	Trp	Asp	Asn	Asp	Lys	Arg	Val	Asp	Leu	Pro	Asp	Asn	Asn	Leu	Asn
			180					185					190		
Val	Gln	Tyr	Gly	Lys	Gly	Thr	Tyr	Ser	Gln	Asp	Leu	Ile	His	Ser	Lys
	195						200					205			
Ala	Leu	Ala	Phe	Leu	Asp	Glu	Ala	Ala	Lys	Glu	Lys	Asp	Gln	Pro	Phe
210						215					220				
Phe	Met	Trp	Tyr	Pro	Thr	Ile	Ile	Pro	His	Ala	Glu	Leu	Ile	Val	Pro
225					230					235					240
Glu	Asp	Ser	Ile	Ile	Lys	Lys	Phe	Arg	Gly	Lys	Tyr	Pro	Glu	Lys	Pro
			245						250					255	
Tyr	Arg	Gly	Val	Glu	Pro	Gly	Ser	Pro	Ala	Phe	Arg	Lys	Gly	Gly	Tyr
			260					265					270		
Cys	Thr	Gln	Phe	Tyr	Pro	His	Ala	Thr	Phe	Ala	Ala	Met	Val	Tyr	Arg
		275					280					285			
Leu	Asp	Val	Tyr	Val	Gly	Gln	Ile	Val	Gln	Lys	Leu	Lys	Asp	Met	Gly
290						295					300				
Val	Tyr	Asp	Asn	Thr	Ile	Ile	Ile	Phe	Ser	Ser	Asp	Asn	Gly	Pro	His
305					310					315					320
Met	Glu	Gly	Gly	Ala	Asp	Pro	Asp	Phe	Phe	Asn	Ser	Asn	Gly	Ile	Trp
			325					330						335	
Arg	Gly	Tyr	Lys	Arg	Asp	Val	Tyr	Glu	Gly	Gly	Ile	Arg	Val	Pro	Met
			340					345					350		
Ile	Ile	Ser	Trp	Pro	Gly	His	Val	Gln	Pro	Ser	Thr	Glu	Thr	Asp	Phe
	355					360						365			
Met	Cys	Ser	Phe	Trp	Asp	Leu	Met	Pro	Thr	Phe	Arg	Glu	Val	Leu	Asn
370						375					380				
Pro	Lys	Ala	Asp	Thr	Arg	Asn	Met	Asp	Gly	Val	Ser	Ile	Leu	Pro	Leu
385					390					395					400
Leu	Gln	Asn	Arg	Lys	Gly	Gln	Lys	Glu	His	Glu	Tyr	Leu	Tyr	Phe	Glu
			405						410					415	
Phe	Leu	Glu	Met	Asn	Gly	Arg	Gln	Ala	Val	Arg	Lys	Gly	Asp	Trp	Lys
			420					425					430		
Leu	Val	His	Met	Asn	Ile	Arg	Gly	Asn	Lys	Pro	Tyr	Tyr	Glu	Leu	Tyr
		435					440					445			
Asn	Leu	Ala	Ser	Asp	Pro	Ser	Glu	Lys	Tyr	Asn	Val	Leu	Asn	Gln	Tyr
450						455					460				
Pro	Glu	Lys	Ala	Asp	Glu	Leu	Lys	Ala	Ile	Met	Lys	Glu	Ala	His	Ile
465					470					475					480
Glu	Asp	Ser	Asn	Trp	Pro	Leu	Phe	Arg							
			485												

<210> 10052

<211> 494

<212> PRT

<213> B.fragilis

<400> 10052

Ser Leu His Ile Phe Ile Met Phe Arg Leu Ile Lys Lys Ile Leu Pro
 1 5 10 15
 Trp Tyr Leu Lys Ala Phe Ala Glu Asn Asn Lys Thr Leu Val Lys Arg
 20 25 30
 Phe Ala Lys Asn Asn Val Lys Met Gln Tyr Asp Tyr Leu Glu Ala Leu
 35 40 45
 Val Lys Asp Leu Ser Leu Tyr Lys Ile Lys Thr Glu Ile Asn Met Lys
 50 55 60
 Asn Leu Arg Ile Trp Gln Thr Leu Ser Leu Phe Ile Leu Leu Leu Ser
 65 70 75 80
 Ile Thr Leu Pro Leu Ser Ala Lys Ser Asp Leu Leu Thr Lys Leu Asn
 85 90 95
 Thr Ile Thr Leu Ile Ile Arg Thr Gln Ser Leu Glu Thr Ser Leu Phe
 100 105 110
 Ala Glu Lys Tyr Leu Leu Arg Phe Lys Gln Pro Leu Asp His Ser His
 115 120 125
 Pro Glu Lys Gly Ser Phe Ser Gln Arg Val Ile Val Ala His Val Gly
 130 135 140
 Tyr Asp Arg Pro Thr Leu Met Val Thr Glu Gly Tyr Gly Ala Ala Arg
 145 150 155 160
 Ser Leu Asn Pro Gly Tyr Tyr Glu Glu Leu Ser Lys Leu Phe Asn Thr
 165 170 175
 Asn Ile Ile Ala Val Glu His Arg Tyr Phe Leu Glu Ser Thr Pro Lys
 180 185 190
 Pro Lys Asp Trp Lys Tyr Leu Thr Ala Trp Asn Ser Ala Arg Asp Leu
 195 200 205
 His Ala Ile Arg Glu Ala Phe Arg Ser Ile Tyr Pro Gly Lys Trp Ile
 210 215 220
 Ala Thr Gly Ile Ser Lys Gly Gly Gln Thr Ala Met Leu Tyr Arg Thr
 225 230 235 240
 Tyr Phe Pro Asp Asp Ile Asp Ile Thr Val Pro Tyr Val Ala Pro Leu
 245 250 255
 Cys Arg Ser Val Glu Asp Gly Arg His Glu Pro Phe Leu Arg Thr Val
 260 265 270
 Ala Met Pro Asp Asp Arg Gln Lys Val Glu Asp Phe Gln Met Glu Val
 275 280 285
 Leu Lys Arg Lys Ala Ala Leu Pro His Phe Lys Lys Tyr Cys Ser
 290 295 300
 Val Arg Lys Leu Gln Phe Arg Ala Pro Val Glu Asp Ile Tyr Asp Tyr
 305 310 315 320
 Thr Val Leu Glu Tyr Ser Phe Ser Leu Trp Gln Trp Gly Ile Pro Val
 325 330 335
 Ser Arg Ile Pro Ser Val Ser Ala Ser Asp Lys Glu Leu Phe Asp His
 340 345 350
 Leu Val Ala Ile Ser Ala Pro Ser Tyr Phe Val Lys Glu Gly Ser Asn
 355 360 365
 Thr Ser Phe Phe Val Gln Ala Ala Arg Glu Leu Gly Tyr Tyr Gly Tyr
 370 375 380
 Asp Ile Arg Pro Phe Arg Glu Tyr Leu Ser Ile Gly Thr Ser Lys Asp
 385 390 395 400
 Tyr Leu Arg Arg Leu Met Ile Pro Glu Glu Leu Ala Asp Met Glu Phe
 405 410 415
 Asp Glu Thr Leu Ser Tyr Lys Ile Thr Arg Phe Leu Lys Glu Asn Asp
 420 425 430
 Pro Lys Met Ile Phe Ile Tyr Gly Gln Tyr Asp Pro Trp Thr Ala Ala
 435 440 445

Gly Val Thr Trp Leu Lys Gly Lys Lys Asn Ile His Val Phe Val Gln
 450 455 460
 Pro Lys Gly Ser His Met Ala Arg Ile His Thr Leu Pro Gln Lys Glu
 465 470 475 480
 Lys Glu Glu Ala Ile Gly Leu Ile Lys Lys Trp Leu Glu Glu
 485 490

<210> 10053
 <211> 657
 <212> PRT
 <213> B.fragilis

<400> 10053
 Tyr Met Asn Met Lys Lys Ile Leu Leu Val Leu Thr Leu Phe Thr Gly
 1 5 10 15
 Met Ile Leu Ala Gly Cys Asn Asp Ser Phe Leu Glu Lys Tyr Pro Val
 20 25 30
 Thr Ser Leu Thr Glu Glu Asn Ala Phe Lys Ser Tyr Asp Asn Phe Lys
 35 40 45
 Ala Phe Met Trp Pro Cys Tyr Glu Met Phe Ser Asn Thr Asn Ile Ala
 50 55 60
 Thr Ser Thr Thr Ala Ile Gly Arg Asn Ser His Tyr Met Gly Asp Val
 65 70 75 80
 Tyr Ala Gly Tyr Leu Asn Gln Arg Gly Ala Ser Ser Gln Asn Lys Tyr
 85 90 95
 Ala Phe Gln Thr Val Thr Asn Ala Thr Ser Gly Asn Gly Trp Asn Phe
 100 105 110
 Ser Thr Phe Ile Arg Arg Ile Asn Leu Met Leu Ser His Val Asp Asp
 115 120 125
 Ser Asp Met Thr Glu Ala Glu Lys Asn His Trp Lys Ala Val Gly Tyr
 130 135 140
 Phe Phe His Ser Phe Trp Tyr Met Glu Leu Ile Asp Arg Phe Gly Asp
 145 150 155 160
 Val Pro Trp Ile Asp Lys Pro Leu Asp Glu Thr Ser Glu Glu Ala Tyr
 165 170 175
 Gly Thr Arg Met Pro Arg Leu Glu Val Ala Asp Lys Val Leu Glu Arg
 180 185 190
 Leu Gln Trp Ala Glu Gln Asn Ile Gly Asp Ala Ser Val Tyr Glu Lys
 195 200 205
 Lys Asp Gly Ser Asn Thr Ile Asn Arg Asp Cys Val Arg Ala Ala Leu
 210 215 220
 Ser Arg Phe Thr Leu Arg Glu Ala Thr Trp Arg Lys Tyr His Glu Leu
 225 230 235 240
 Gly Ser Tyr Asp Lys Tyr Phe Asp Glu Cys Ile Arg Val Ser Lys Leu
 245 250 255
 Leu Met Ala Asp Tyr Pro Thr Leu Tyr Tyr Gly Thr Asp Gly Gln Pro
 260 265 270
 Ala Ala Gly Tyr Gly Glu Met Trp Thr Thr Glu Asp Leu Ser Lys Val
 275 280 285
 Gln Gly Val Ile Leu Tyr Gln Gln Trp Leu Glu Thr Ile Lys Pro Gly
 290 295 300
 His Ser Cys Tyr Tyr Glu His Thr Ser Ser His Asp Ile Glu Met His
 305 310 315 320
 Gln Gly Thr Val Asp Leu Tyr Leu Cys Lys Asp Gly Lys Thr Ile Ser
 325 330 335
 His Ser Asp Gln Tyr Gln Gly Asp Lys Asp Ile Tyr Ala Thr Phe Arg
 340 345 350
 Asn Arg Asp Pro Arg Met Tyr His Thr Ile Met Pro Pro Tyr Lys Val
 355 360 365

Lys Asp Gly Lys Gly Asp Tyr Ser Thr Trp Ser Tyr Thr Ser Asp Pro
 370 375 380
 Ala Asp Arg Glu Tyr Ile Asp Ile Met Gly Ala Asn Glu Ser Cys Ser
 385 390 395 400
 Asn Pro Gly Ile Gly Met Lys Arg Leu Pro Gly Gln Asn Trp Ser Ala
 405 410 415
 Ser Leu Val Arg Arg Val Pro Asn Leu Gln Gly Gly Ala Gln Tyr Thr
 420 425 430
 Ile Glu Gly Lys Lys Tyr Gly Pro His Ala Tyr Val Ala Ser Arg Ser
 435 440 445
 Gly Tyr Tyr Val Trp Lys Asn Trp Asp Asn Trp Glu Glu Asn Tyr Asn
 450 455 460
 Asn Ala Gln Val Asn Thr Ala Asp Lys Pro Val Phe Lys Ile Glu Glu
 465 470 475 480
 Val Leu Leu Asn Tyr Ala Glu Ala Met Phe Glu Thr Asn Gln Phe Thr
 485 490 495
 Gln Thr Ile Ala Asp Glu Thr Ile Asn Lys Leu Arg Lys Arg Ala Gly
 500 505 510
 Val Ala Asp Met Val Val Ala Gln Ile Asp Gly Asn Phe Asp Pro Lys
 515 520 525
 Arg Gly Lys Tyr Tyr Pro Lys Gly Asn Asp Asn Gly Ile Leu Val Asp
 530 535 540
 Pro Val Leu Trp Glu Ile Arg Arg Glu Arg Ile Ile Glu Leu Met Gly
 545 550 555 560
 Glu Gly Phe Gly Phe Tyr Asp Val Arg Arg Trp Arg Met Ala Pro Trp
 565 570 575
 Phe Val Asn Met Gln Gln Lys Gly Met Trp Ile Ser Lys Thr Glu Leu
 580 585 590
 Ser Ser Leu Thr Leu Leu Asn Glu Met Thr Gly Thr Ser Asp Gly Ala
 595 600 605
 Asn Gly Ser Met Thr Glu Gly Tyr Ile Tyr Leu Phe Asn Asp Pro Leu
 610 615 620
 Lys Glu Gly Lys Gly Trp Leu Glu Lys Tyr Tyr Leu Tyr Gln Val Pro
 625 630 635 640
 Leu Glu Glu Ile Ala Leu Asn Pro Asn Leu Thr Gln Asn Pro Gly Trp
 645 650 655
 Glu

<210> 10054
 <211> 467
 <212> PRT
 <213> B.fragilis

<400> 10054
 Gln Lys Thr Ile Ile Phe Ala Arg Pro Val Phe Tyr His Ser His Phe
 1 5 10 15
 Asn Leu Ser Asp Met Ser Lys Ile Leu Ile Ile Asp Asp Glu Val Gln
 20 25 30
 Ile Arg Gly Leu Leu Ala Arg Met Met Glu Leu Glu Gly Tyr Glu Val
 35 40 45
 Cys Gln Ala Gly Asp Cys Lys Thr Ala Leu Arg Gln Leu Glu Leu Gln
 50 55 60
 Met Pro Asp Val Ala Leu Cys Asp Val Phe Leu Pro Asp Gly Asn Gly
 65 70 75 80
 Val Asp Leu Val Thr Glu Met Lys Lys Lys Ser Pro Gly Val Glu Ile
 85 90 95
 Ile Leu Leu Thr Ala His Gly Asn Ile Pro Asp Gly Val Gln Ala Ile
 100 105 110

Lys Asn Gly Ala Phe Asp Tyr Ile Thr Lys Gly Asp Asp Asn Asn Lys
 115 120 125
 Ile Ile Pro Leu Ile Ser Arg Ala Val Glu Lys Ala Arg Met Asn Ile
 130 135 140
 Arg Leu Asp Lys Leu Glu Lys Lys Met Gly Leu Met Tyr Ser Phe Asp
 145 150 155 160
 Ser Ile Leu Gly Glu Ser Lys Ala Leu Lys Glu Ala Val Ser Leu Ala
 165 170 175
 Arg Lys Val Ser Val Thr Asp Val Pro Val Leu Leu Thr Gly Glu Thr
 180 185 190
 Gly Thr Gly Lys Glu Val Phe Ala Gln Ser Ile His Tyr Ser Ser Lys
 195 200 205
 Arg Ala Arg Gln Asn Phe Val Ala Val Asn Cys Ser Ser Phe Ser Lys
 210 215 220
 Glu Leu Leu Glu Ser Glu Met Phe Gly His Lys Ala Gly Ser Phe Thr
 225 230 235 240
 Gly Ala Leu Lys Asp Lys Lys Gly Leu Phe Glu Glu Ala Asn Asn Gly
 245 250 255
 Thr Ile Phe Leu Asp Glu Ile Gly Glu Met Ala Phe Glu Leu Gln Ala
 260 265 270
 Lys Leu Leu Arg Ile Leu Glu Thr Gly Glu Tyr Ile Lys Ile Gly Asp
 275 280 285
 Thr Lys Pro Thr His Ile Asp Val Arg Ile Ile Ala Ala Thr Asn Arg
 290 295 300
 Asn Leu Pro Ala Glu Ile Ala Ala Gly Arg Phe Arg Glu Asp Leu Phe
 305 310 315 320
 Tyr Arg Leu Ser Val Phe Gln Val His Leu Pro Pro Leu Arg Glu Arg
 325 330 335
 Thr Gly Asp Ile Lys Ile Leu Ala Glu Ser Phe Val Arg Ser Phe Ser
 340 345 350
 Glu Lys Leu Ser His Pro Val Asn Arg Ile Ala Pro Ala Tyr Leu Glu
 355 360 365
 Ala Leu Cys Gln Gln Pro Trp Lys Gly Asn Ile Arg Glu Leu Arg Asn
 370 375 380
 Val Ile Glu Arg Ser Leu Ile Val Cys Glu Gly Asp Arg Leu Asp Val
 385 390 395 400
 Asp Asp Leu Pro Leu Glu Ile Gln Asn Ser His Tyr Glu Lys Ser Asp
 405 410 415
 Glu Gly Met Pro Gly Ser Phe Glu Leu Ser Ala Met Glu Arg Arg His
 420 425 430
 Ile Ala Arg Val Leu Glu Tyr Thr Lys Gly Asn Lys Thr Glu Ala Ala
 435 440 445
 Arg Leu Leu Lys Ile Gly Leu Thr Thr Leu Tyr Arg Lys Ile Glu Glu
 450 455 460
 Tyr Lys Leu
 465

<210> 10055

<211> 415

<212> PRT

<213> B.fragilis

<400> 10055

Lys Ile Leu Ile Thr Lys Thr Arg Tyr Lys Ser Met Glu Pro Ile Arg
 1 5 10 15
 Leu Asn Thr Ile Glu Glu Ala Ile Ala Asp Phe Lys Glu Gly Asn Phe
 20 25 30
 Val Ile Val Val Asp Asp Glu Asp Arg Glu Asn Glu Gly Asp Phe Ile
 35 40 45

Ile Ala Ala Glu Lys Ile Thr Pro Glu Lys Val Asn Phe Met Leu Thr
 50 55 60
 His Gly Arg Gly Val Leu Cys Ala Pro Ile Thr Glu Glu Arg Cys Ala
 65 70 75 80
 Glu Leu Glu Leu Asp Met Gln Val Ser Ser Asn Thr Ser Ile Tyr Glu
 85 90 95
 Thr Pro Phe Thr Val Thr Val Asp Leu Leu Glu Gly Cys Thr Thr Gly
 100 105 110
 Val Ser Met His Asp Arg Ala Met Thr Ile Arg Ala Leu Ala Asp Pro
 115 120 125
 Lys Thr Lys Pro Ala Asp Leu Gly Arg Pro Gly His Ile Asn Pro Leu
 130 135 140
 Arg Ala Arg Ser Arg Gly Val Leu Arg Arg Ala Gly His Thr Glu Ala
 145 150 155 160
 Ser Val Asp Leu Ala Lys Leu Ala Gly Leu Tyr Pro Ala Ala Ala Leu
 165 170 175
 Ile Glu Ile Ile Asn Glu Asp Gly Thr Met Ala Arg Leu Pro Gln Leu
 180 185 190
 Val Glu Val Ala Arg Arg Phe Gly Leu Lys Ile Ile Ser Ile Lys Asp
 195 200 205
 Leu Ile Ala Tyr Arg Leu Gln Met Glu Ser Ile Val Asp Arg Gly Val
 210 215 220
 Glu Val Asp Met Pro Thr Gln Phe Gly His Phe Arg Leu Ile Pro Phe
 225 230 235 240
 Arg Gln Lys Ser Asn Gly Met Glu His Ile Ala Leu Ile Lys Gly Thr
 245 250 255
 Trp Asp Thr Asp Glu Pro Ile Leu Val Arg Val His Ser Ser Cys Met
 260 265 270
 Thr Gly Asp Ile Phe Gly Ser Cys Arg Cys Glu Cys Gly Glu Gln Leu
 275 280 285
 His Lys Ala Met Glu Met Ile Glu Ala Ala Gly Lys Gly Val Ile Val
 290 295 300
 Tyr Met Asn Gln Glu Gly Arg Gly Ile Gly Leu Met Asn Lys Ile Ala
 305 310 315 320
 Ala Tyr Lys Leu Gln Glu Glu Gly Tyr Asp Thr Val Asp Ala Asn Leu
 325 330 335
 His Leu Gly Phe Asp Ala Asp Glu Arg Asp Tyr Gly Val Gly Ala Gln
 340 345 350
 Ile Leu Arg Glu Ile Gly Val Lys Lys Met Lys Leu Met Thr Asn Asn
 355 360 365
 Pro Val Lys Arg Ile Gly Leu Glu Ala Tyr Gly Leu Glu Ile Thr Glu
 370 375 380
 Asn Val Gly Ile Glu Ile Lys Pro Asn Pro Tyr Asn Glu Arg Tyr Leu
 385 390 395 400
 Lys Thr Lys Lys Asp Arg Met Gly His Thr Leu His Phe Asn Lys
 405 410 415

<210> 10056

<211> 960

<212> PRT

<213> B.fragilis

<400> 10056

Thr Ile Lys Ile Ile Asn Leu Ile Leu Tyr Glu Met Lys Thr Arg Thr
 1 5 10 15
 Arg Thr Lys Met Leu Leu Leu Leu Gly Val Leu Leu Phe Gly Phe Thr
 20 25 30
 Val Ser Ala Trp Ser Gln Lys Val Ser Leu Asp Phe Asn Asn Glu Lys
 35 40 45

Val	Glu	Lys	Ile	Leu	Ser	Ser	Ile	Lys	Ala	Gln	Gln	Gly	Met	Gly	Leu
50						55					60				
Val	Phe	Ser	Asp	Gln	Leu	Ile	Asp	Val	Asn	Arg	Lys	Ile	Ser	Ile	Gln
65					70					75					80
Val	Lys	Asp	Ala	Ser	Leu	Asp	Glu	Ala	Leu	Ser	Lys	Leu	Leu	Ala	Gly
				85					90					95	
Thr	Lys	Val	Thr	Phe	Glu	Ile	Lys	Ile	Asn	Lys	Ile	Tyr	Phe	Ile	Glu
			100					105					110		
Lys	Lys	Ala	Asp	Gln	Gln	Ser	Gly	Cys	Arg	Lys	Lys	Lys	Val	Ser	Gly
		115					120					125			
Val	Val	Lys	Asp	Ala	Thr	Gly	Glu	Pro	Ile	Ile	Gly	Ala	Asn	Val	Val
		130				135					140				
Glu	Lys	Gly	Val	Gly	Thr	Asn	Gly	Val	Ile	Thr	Asn	Leu	Asp	Gly	Glu
145					150					155					160
Phe	Thr	Leu	Glu	Val	Pro	Glu	Asn	Ala	Ser	Leu	Ile	Ile	Ser	Tyr	Ile
				165					170					175	
Gly	Tyr	Leu	Gln	Gln	Asp	Val	Ser	Thr	Lys	Gly	Lys	Asp	Ala	Phe	Asn
			180					185					190		
Ile	Ile	Met	Lys	Glu	Asp	Thr	Lys	Thr	Leu	Asp	Glu	Val	Val	Val	Val
		195					200					205			
Gly	Tyr	Gly	Val	Gln	Lys	Lys	Val	Asn	Leu	Thr	Gly	Ala	Val	Ala	Ala
		210				215					220				
Val	Asp	Ser	Lys	Ser	Leu	Gln	Asn	Arg	Pro	Val	Thr	Asn	Val	Ser	Asn
225					230					235					240
Ala	Ile	Gln	Gly	Leu	Leu	Pro	Gly	Val	Thr	Val	Ile	Ser	Gly	Thr	Gly
				245					250					255	
Gln	Pro	Gly	Asn	Asp	Asn	Thr	Thr	Ile	Arg	Val	Arg	Gly	Val	Gly	Thr
			260					265					270		
Leu	Asn	Asn	Ser	Asn	Pro	Met	Tyr	Val	Val	Asp	Gly	Leu	Pro	Val	Ser
		275					280					285			
Ser	Ile	Asn	Glu	Val	Asp	Pro	Ser	Asp	Ile	Glu	Asn	Ile	Ser	Val	Leu
		290				295					300				
Lys	Asp	Ala	Ser	Ser	Ala	Ala	Ile	Tyr	Gly	Ser	Arg	Ala	Ala	Asn	Gly
305					310					315					320
Val	Ile	Leu	Ile	Thr	Thr	Lys	Lys	Gly	Gly	Asp	Lys	Ala	Pro	Thr	Leu
				325					330					335	
Arg	Tyr	Asp	Gly	Tyr	Val	Gly	Trp	Gln	Lys	Pro	Thr	Ala	Leu	Pro	Glu
			340					345					350		
Tyr	Leu	His	Ser	Trp	Glu	Tyr	Ala	Lys	Leu	Tyr	Asn	Lys	Ala	Met	Val
		355					360					365			
Asn	Glu	Gly	Lys	Asn	Pro	Ile	Tyr	Thr	Asp	Glu	Glu	Ile	Glu	Lys	Phe
		370				375					380				
Arg	Asn	Gly	Ser	Asp	Pro	Asp	Asn	Tyr	Pro	Asp	Thr	Asp	Trp	Gln	Gly
385					390					395					400
Leu	Phe	Tyr	Lys	Thr	Gly	Leu	Gln	His	Ser	His	Arg	Ala	Glu	Ile	Ser
				405					410					415	
Gly	Gly	Thr	Asp	Lys	Met	Thr	Tyr	Met	Phe	Ser	Ala	Gly	Tyr	Leu	Gly
			420					425					430		
Gln	Asp	Gly	Ile	Ile	Asp	Ile	Ala	Lys	Tyr	Asp	Arg	Tyr	Ser	Val	Arg
		435					440					445			
Gly	Asn	Met	Asn	Ala	Lys	Met	Gly	Lys	Phe	Thr	Ala	Gly	Met	Asn	Leu
		450				455					460				
Ser	Phe	Thr	Tyr	Gly	Glu	Ala	Gln	Glu	Pro	Val	Ser	Gly	Phe	Thr	Gly
465					470					475					480
Glu	Met	Ser	Asn	Ile	Phe	Ser	Gln	Ile	Asn	Gln	Ile	Ala	Pro	Phe	Ile
				485					490					495	
Pro	Tyr	Lys	Tyr	Ser	Asn	Gly	Tyr	Tyr	Gly	Tyr	Ala	Asn	Asp	Gly	Asn
		500						505					510		
Pro	Leu	Ala	Phe	Ile	Glu	Glu	Gly	Asn	Leu	Arg	Thr	Thr	Lys	Gln	His

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	515		520		525
Ile	Thr Arg Ala	Ile Gly Asn	Val Ser Tyr Glu	Pro Ile Lys Gly Leu	
	530		535	540	
Lys	Ile Gln Glu	Ile Val Gly	Tyr Glu Tyr Lys	Ser Ile Ser Asp Glu	
545		550		555	560
Lys	Phe Ile Lys	Asp Ile Gln Tyr	Tyr Tyr Asn Trp	Lys Thr Gly Glu Pro	
	565		570		575
Thr	Lys Tyr Gln	Gly Pro Asn Asn	Gln Thr Asp Glu	Arg Lys Asn Gly	
	580		585		590
Leu	Lys Leu Asn	Leu Gln Thr Leu	Val Ser Tyr Asn	Asn Thr Phe Gly	
	595		600		605
Lys	His Thr Val	Gly Ala Leu Ala	Gly Tyr Glu Gln	Glu Tyr Tyr Arg	
	610		615		620
Glu	Asp Trp Thr	Lys Gly Tyr Arg	Lys Asn Phe Leu	Asn Asn Asp Leu	
625		630		635	640
Trp	Glu Leu Asn	Ala Gly Ser Pro	Asp Gly Gln Thr	Ala Asp Gly Ser	
	645		650		655
Ala	Asn Glu Tyr	Ala Leu Arg Ser	Phe Phe Gly Arg	Leu Thr Tyr Asp	
	660		665		670
Tyr	Asp Asn Arg	Tyr Leu Val Glu	Ala Asn Ile Arg	Arg Asp Gly Thr	
	675		680		685
Ser	Arg Ile Phe	Lys Asp Ser Arg	Trp Gly Val Phe	Pro Ser Phe Ser	
	690		695		700
Gly	Ala Trp Arg	Ile Ile Asn Glu	Pro Phe Met Glu	Gly Thr Arg Asn	
705		710		715	720
Val	Leu Ser Asp	Leu Lys Leu Arg	Gly Gly Trp Gly	Val Leu Gly Asn	
	725		730		735
Gln	Ala Ile Ser	Tyr Tyr Ser Tyr	Gln Ser Val Leu	Asp Gln Ala Asn	
	740		745		750
Tyr	Ser Phe Gly	Gly Thr Val Val	Gln Gly Val Ala	Pro Val Asp Gly	
	755		760		765
Ala	Asn Arg Asp	Leu Ile Trp Glu	Thr Thr Glu Thr	Leu Asn Phe Gly	
	770		775		780
Leu	Asp Met Gly	Phe Leu Gly Asn	Gln Tyr Thr Leu	Ser Ile Glu Gly	
785		790		795	800
Tyr	Arg Lys Leu	Thr Tyr Asp Ile	Leu Met Lys Leu	Pro Val Ser Thr	
	805		810		815
Leu	Tyr Gly Leu	Asn Ala Pro Tyr	Gln Asn Ala Gly	Lys Val Lys Asn	
	820		825		830
Thr	Gly Leu Glu	Ile Thr Ala Gly	Tyr Lys Leu Asn	Thr His Gly Trp	
	835		840		845
Asn	Phe Gln Val	Ser Ala Asn Ala	Tyr Asn Lys Asn	Glu Val Met	
	850		855		860
Asp	Leu Lys Asn	Gly Gly Ala Arg	Ile Trp Ser Gly	Lys Tyr Phe Asn	
865		870		875	880
Gln	Glu Gly Tyr	Ala Ile Asn Ser	Ile Gly Gly Tyr	Ile Ala Glu Gly	
	885		890		895
Leu	Phe Lys Thr	Glu Glu Glu Val	Ala Asn Ser Ala	Thr Ile Pro Gly	
	900		905		910
Thr	Asp Thr Ala	Pro Gly Asp Ile	Lys Tyr Arg Asp	Ile Asn Asn Asp	
	915		920		925
Gly	Lys Ile Asp	Gly Glu Asp Arg	Val Tyr Ile Gly	Asn Thr Met Pro	
	930		935		940
Lys	Trp Thr Phe	Gly Leu Asn Leu	Phe Ala Glu Cys	Leu His His Gly	
945		950		955	960

<210> 10057

<211> 611

<212> PRT

<213> B.fragilis

<400> 10057

Arg	Tyr	Pro	Met	Ile	Lys	Gln	Arg	Lys	Ile	Glu	Leu	Leu	Ala	Pro	Ala		
1				5					10					15			
Lys	Asn	Leu	Glu	Cys	Gly	Ile	Ala	Ala	Ile	Asp	His	Gly	Ala	Asp	Ala		
		20						25					30				
Val	Tyr	Ile	Gly	Ala	Pro	Lys	Phe	Gly	Ala	Arg	Ala	Ala	Ala	Val	Asn		
		35					40					45					
Ser	Leu	Glu	Asp	Ile	Ala	Ala	Leu	Val	Glu	Tyr	Ala	His	Leu	Tyr	Asn		
	50					55					60						
Ala	Arg	Ile	Tyr	Val	Thr	Val	Asn	Thr	Ile	Leu	Lys	Asp	Glu	Glu	Leu		
65					70					75					80		
Gln	Glu	Thr	Glu	Lys	Met	Ile	Trp	Ala	Leu	Phe	Arg	Ala	Gly	Val	Asp		
				85					90					95			
Ala	Leu	Ile	Val	Gln	Asp	Met	Gly	Ile	Thr	Gly	Leu	Asn	Leu	Pro	Pro		
			100					105					110				
Ile	Pro	Leu	His	Ala	Ser	Thr	Gln	Met	Asp	Asn	Arg	Thr	Val	Glu	Lys		
		115					120					125					
Val	Arg	Phe	Leu	Ala	Asp	Ala	Gly	Phe	Arg	Gln	Val	Val	Leu	Ala	Arg		
	130					135					140						
Glu	Leu	Ser	Leu	Arg	Glu	Ile	Ser	Lys	Ile	His	Glu	Ala	Cys	Pro	Asp		
145					150					155					160		
Val	Pro	Leu	Glu	Ile	Phe	Val	His	Gly	Ala	Leu	Cys	Val	Ser	Tyr	Ser		
				165					170						175		
Gly	Gln	Cys	Tyr	Val	Ser	Gln	Ala	Cys	Phe	Gly	Arg	Ser	Ala	Asn	Arg		
			180					185					190				
Gly	Glu	Cys	Ala	Gln	Phe	Cys	Arg	Leu	Pro	Phe	Ser	Leu	Val	Asp	Ala		
		195					200					205					
Glu	Gly	Arg	Val	Ile	Val	Lys	Asp	Lys	His	Leu	Leu	Ser	Leu	Lys	Asp		
	210					215					220						
Leu	Asn	Gln	Ser	Asp	Glu	Leu	Glu	Ala	Leu	Leu	Asp	Ala	Gly	Ala	Ser		
225					230					235					240		
Ser	Phe	Lys	Ile	Glu	Gly	Arg	Leu	Lys	Asp	Val	Ser	Tyr	Val	Lys	Asn		
				245					250					255			
Val	Thr	Ala	Ala	Tyr	Arg	Arg	Lys	Leu	Asp	Ala	Ile	Phe	Ala	Arg	Arg		
			260					265					270				
Lys	Glu	Tyr	Ala	Arg	Ala	Ser	Ser	Gly	Ser	Cys	Arg	Tyr	Ala	Phe	Asn		
		275					280						285				
Pro	Gln	Leu	Asp	Lys	Ser	Phe	Ser	Arg	Gly	Phe	Thr	His	Tyr	Tyr	Leu		
		290				295					300						
His	Gly	Arg	Thr	Lys	Asp	Val	Phe	Ser	Phe	Asp	Thr	Pro	Lys	Ser	Leu		
305					310					315					320		
Gly	Glu	Glu	Met	Gly	Thr	Met	Lys	Glu	Ala	Arg	Gly	Asn	Tyr	Leu	Thr		
				325					330					335			
Val	Ala	Gly	Leu	Lys	Ser	Phe	Asn	Asn	Gly	Asp	Gly	Met	Cys	Tyr	Ile		
			340					345					350				
Asp	Glu	Gln	Gly	Arg	Leu	Gln	Gly	Phe	Arg	Ile	Asn	Arg	Val	Glu	Gly		
		355					360					365					
Asn	Lys	Leu	Tyr	Pro	Gln	Glu	Met	Pro	Arg	Ile	Lys	Pro	Arg	Thr	Val		
	370					375					380						
Leu	Tyr	Arg	Asn	Phe	Asp	Gln	Glu	Phe	Glu	Lys	Ile	Leu	Ala	Arg	Lys		
385					390					395					400		
Ser	Ser	Glu	Arg	Arg	Ile	Ala	Val	Ser	Val	Arg	Leu	Thr	Asp	Thr	Pro		
				405					410					415			
Phe	Gly	Phe	Ala	Leu	Thr	Leu	Thr	Asp	Glu	Asp	Asp	Asn	Ser	Val	Thr		
			420					425					430				
Leu	Ser	Leu	Ala	Arg	Glu	Lys	Glu	Pro	Ala	Arg	Thr	Pro	Gln	Glu	Glu		
		435					440						445				

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Asn	Leu	Lys	Thr	Gln	Leu	Ala	Lys	Phe	Gly	Asn	Thr	Pro	Phe	Glu	Ala
450						455					460				
Val	Arg	Ile	Asp	Ile	Asp	Phe	Ala	Gly	Asn	Trp	Phe	Leu	Pro	Ala	Ser
465						470				475					480
Val	Leu	Ala	Asp	Phe	Ser	Arg	Gln	Ala	Val	Glu	Lys	Leu	Ile	Ser	Ala
						485				490					495
Arg	Arg	Ile	Asn	Tyr	Arg	Arg	Glu	Leu	Phe	Val	Leu	Lys	Pro	Thr	Ala
						500				505					510
His	Ala	Phe	Pro	Gln	Ser	Thr	Leu	Thr	Tyr	Leu	Gly	Asn	Val	Met	Asn
						515				520					525
Ala	Gln	Ala	Val	Ser	Phe	Tyr	Thr	Gly	His	Gly	Val	Ala	Ser	Ile	Ala
						530				535					540
Pro	Ala	Phe	Glu	Arg	Ala	Pro	Ala	Glu	Lys	Ala	Val	Leu	Met	Phe	Cys
545						550				555					560
Lys	His	Cys	Leu	Arg	Tyr	Ser	Met	Gly	Trp	Cys	Pro	Val	His	Gln	Arg
						565				570					575
Glu	Arg	Ser	Pro	Tyr	Arg	Glu	Pro	Tyr	Tyr	Leu	Val	Ser	Thr	Asp	Gly
						580				585					590
Lys	Arg	Phe	Arg	Leu	Glu	Phe	Asp	Cys	Lys	Asn	Cys	Gln	Met	Lys	Val
						595				600					605
Asn	Ala	Val													
															610

<210> 10058

<211> 707

<212> PRT

<213> B.fragilis

<400> 10058

Glu	Val	Gln	Ile	Val	Ser	Thr	Arg	Ala	Thr	Ser	Lys	Thr	Pro	Val	Ala
1				5					10					15	
Phe	Thr	Asn	Val	Ser	Lys	Glu	Glu	Leu	Lys	Lys	Gln	Asn	Phe	Gly	Gln
				20				25					30		
Asp	Ile	Pro	Phe	Leu	Leu	Ser	Met	Thr	Pro	Ser	Ala	Leu	Thr	Thr	Ser
				35				40					45		
Asp	Ala	Gly	Ala	Gly	Ile	Gly	Tyr	Thr	Thr	Leu	Arg	Val	Arg	Gly	Thr
				50				55				60			
Asp	Gly	Thr	Arg	Ile	Asn	Ile	Thr	Ala	Asn	Gly	Ile	Pro	Met	Asn	Asp
65					70					75					80
Ala	Glu	Ser	His	Thr	Leu	Phe	Trp	Val	Asn	Met	Pro	Asp	Phe	Ala	Ser
				85				90						95	
Ser	Val	Lys	Asp	Ile	Gln	Val	Gln	Arg	Gly	Ala	Gly	Thr	Ser	Thr	Asn
				100				105						110	
Gly	Ala	Gly	Ala	Phe	Gly	Ala	Ser	Val	Asn	Met	Gln	Thr	Glu	Gly	Ile
				115				120						125	
Ser	Met	Gln	Pro	Tyr	Ala	Glu	Ile	Asn	Ala	Ser	Tyr	Asp	Ser	Phe	Asn
				130				135						140	
Ala	His	Lys	Glu	Thr	Val	Lys	Phe	Gly	Thr	Gly	Leu	Leu	Lys	Asp	His
145					150					155					160
Trp	Ala	Phe	Asp	Ala	Arg	Leu	Ser	Thr	Ile	Gly	Thr	Asp	Gly	Tyr	Ile
				165						170					175
Asp	Arg	Ala	Ser	Val	Asp	Leu	Tyr	Ser	Phe	Tyr	Ala	Gln	Gly	Gly	Tyr
				180				185						190	
Phe	Ala	Asp	Asn	Thr	Ser	Val	Lys	Phe	Ile	Thr	Phe	Gly	Gly	Lys	Glu
				195				200						205	
Lys	Thr	Tyr	His	Ala	Trp	Asn	Tyr	Ala	Thr	Lys	Glu	Glu	Met	Lys	Lys
				210				215						220	
Tyr	Gly	Pro	Arg	Phe	Asn	Ser	Cys	Gly	Met	Tyr	Thr	Asp	Asp	His	Gly
225					230					235					240

His Ile Arg Phe Tyr Lys Asp Gln Thr Asp Asn Tyr Leu Gln Met Asn
 245 250 255
 Tyr Gln Leu Leu Leu Asn His Thr Phe Ser Ala Ala Trp Asn Leu Asn
 260 265 270
 Ala Ala Leu His Tyr Thr Lys Gly Asp Gly Tyr Tyr Gln Glu Tyr Lys
 275 280 285
 Glu Asp Arg Ser Leu Lys Glu Tyr Arg Leu His Pro Phe Met Tyr Asp
 290 295 300
 Gly Lys Glu Val Glu Lys Ser Asp Leu Ile Arg Gln Lys Lys Met Asp
 305 310 315 320
 Asn His Phe Gly Gly Val Phe Ser Val Asn Tyr Pro His Gln Asn
 325 330 335
 Met Asp Ala Ser Leu Val Asn Ala Leu Asn Tyr Tyr Asp Gly Trp His
 340 345 350
 Phe Gly Arg Val Ile Trp Val Lys Asn Tyr Ile Gly Glu Leu Leu Pro
 355 360 365
 Asp His Glu Tyr Tyr Arg Asn Lys Ala Lys Lys Thr Asp Gly Asn Leu
 370 375 380
 Tyr Leu Lys Ala Asn Tyr Asn Leu Val Ala Gly Leu Asn Ala Tyr Ala
 385 390 395 400
 Asp Leu Gln Tyr Arg Tyr Ile Asn Tyr Lys Ile His Gly Asp Asn Asp
 405 410 415
 Lys Tyr Asp Tyr Asn Thr Asp Gly Leu Gln Lys Leu Ala Val Asn Asp
 420 425 430
 His Phe Asn Phe Phe Asn Pro Lys Ala Gly Leu Asn Trp Asp Ile Asp
 435 440 445
 Ser Asn Asn Arg Val Tyr Ala Ser Phe Ser Val Ala Gln Lys Glu Pro
 450 455 460
 Thr Arg Asn Asn Tyr Thr Asp Gly Asn Ala Asp Glu Tyr Pro Lys Ala
 465 470 475 480
 Glu Lys Leu Tyr Asp Tyr Glu Leu Gly Tyr Thr Tyr Arg Asn Thr Trp
 485 490 495
 Leu Ser Ala Gly Val Asn Phe Tyr Tyr Met Asp Tyr Lys Asp Gln Leu
 500 505 510
 Val Leu Thr Gly Glu Leu Asn Glu Ile Gly Glu Ala Met Ala Arg Asn
 515 520 525
 Val Pro Asp Ser Tyr Arg Thr Gly Val Glu Leu Met Leu Gly Val Lys
 530 535 540
 Pro Cys Arg Trp Phe Gln Trp Asp Ile Asn Gly Thr Leu Ser Lys Asn
 545 550 555 560
 Arg Val Lys Asn Phe Thr Glu Lys Leu Tyr Glu Asp Glu Trp Lys Asn
 565 570 575
 Pro Ile Glu Val Glu His Gly Asn Thr Pro Ile Ala Phe Ser Pro Asp
 580 585 590
 Phe Ile Leu Asn Asn Arg Phe Ser Phe Ser His Lys Gly Phe Glu Ala
 595 600 605
 Ala Leu Gln Ser Gln Tyr Val Ser Lys Gln Tyr Met Ser Asn Ala Lys
 610 615 620
 Gln Ala Glu Gln Thr Leu Asp Ala Tyr Phe Val Ser Asn Leu Asn Leu
 625 630 635 640
 Ala Tyr Thr Phe Gln Leu Arg His Val Lys Ser Val Thr Val Gly Phe
 645 650 655
 Thr Ile Tyr Asn Leu Phe Asn Glu Lys Tyr Glu Asn Asn Gly Tyr Ala
 660 665 670
 Gly Ser Gly Tyr Thr Leu Lys Asp Gly Lys Pro Glu Arg Tyr Asn Tyr
 675 680 685
 Ala Gly Tyr Ala Ala Gln Ala Gly Thr Asn Val Met Gly Asn Ile Ser
 690 695 700
 Ile Arg Phe

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705

<210> 10059
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 10059

Lys	Val	Lys	Met	Lys	Asn	Val	Ile	Asn	Lys	Asn	Thr	Ile	Leu	Ala	Leu
1				5					10					15	
Met	Val	Ile	Gly	Met	Met	Cys	Phe	Trp	Gly	Ser	Met	Asn	Ala	Asn	Ala
			20					25					30		
Gln	Gln	Phe	Asn	Val	Gln	Gly	Asp	Leu	Val	Ser	Ser	Tyr	Val	Trp	Arg
		35					40					45			
Gly	Met	Tyr	Gln	Thr	Gly	Ala	Ser	Ile	Gln	Pro	Thr	Leu	Gly	Phe	Ser
	50					55					60				
Val	Gly	Asn	Phe	Ser	Leu	Thr	Ala	Trp	Gly	Ser	Thr	Asp	Phe	Asp	Gly
65					70					75				80	
Thr	Ser	Ala	Ser	Ala	Gly	Ala	Ala	Ala	Lys	Glu	Ile	Asp	Leu	Thr	Ala
			85						90					95	
Ala	Tyr	Thr	Ile	Ser	Arg	Ser	Gly	Leu	Thr	Gly	Leu	Val	Ala	Asp	Leu
			100					105					110		
Gly	Trp	Gly	Arg	Thr	Gly	Ser	Thr								
		115					120								

<210> 10060
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 10060

Leu	Val	Lys	Ile	Val	Leu	Leu	Ala	Glu	Leu	Val	Leu	Thr	Ser	Val	Arg
1				5					10					15	
Leu	Ala	Leu	Ser	Leu	Lys	Val	Ile	Phe	Thr	Gln	Leu	Ile	Leu	Ser	Ser
			20					25					30		
Val	Gln	Ile	Val	Val	Leu	Ala	Gln	Met	Tyr	Val	Leu	Leu	Lys	Gln	Phe
		35					40					45			
Thr	Gln	Leu	Asn	Asn	Thr	Ile	Pro	Asn	Asn	Lys	Asp	Lys	Gly	Cys	Leu
	50					55					60				
Pro	Asn	Gly	Lys	Gln	Pro	Leu	Phe	Ile	Ser	Phe	Gln	Thr	Phe	Gly	Lys
65				70						75				80	
Leu															

<210> 10061
 <211> 124
 <212> PRT
 <213> B.fragilis

<400> 10061

Asn	Met	Glu	Ile	Asn	Glu	Leu	Thr	Gly	Leu	Ile	Leu	Lys	Lys	Ala	Tyr
1				5					10					15	
Glu	Val	His	Thr	Val	Leu	Gly	Pro	Gly	Leu	Leu	Glu	Ser	Ala	Tyr	Glu
			20					25					30		
Glu	Cys	Leu	Cys	Tyr	Glu	Leu	Ile	Gln	Cys	Gly	Leu	Asn	Val	Glu	Lys
		35					40					45			
Gln	Lys	Ala	Leu	Pro	Val	Val	Tyr	Lys	Asn	Ile	Lys	Val	Asp	Ala	Gly
	50					55					60				
Tyr	Arg	Leu	Asp	Ile	Val	Val	Asn	Asn	Ala	Val	Ile	Ile	Glu	Ile	Lys

65 70 75 80
 Ala Val Glu Glu Leu His Pro Val His Thr Ala Gln Leu Ile Thr Tyr
 85 90 95
 Leu Lys Leu Ser Gly Ile Lys Tyr Gly Leu Leu Ile Asn Phe Asn Val
 100 105 110
 Arg Ser Leu Lys Glu Gly Ile Arg Arg Tyr Ile Val
 115 120

<210> 10062
 <211> 111
 <212> PRT
 <213> B.fragilis

<400> 10062
 Leu Cys Leu Val Ile Arg Lys Lys Tyr Leu Ser Trp His Thr Gln Ser
 1 5 10 15
 Ile Met Asn Glu Ala Met Lys Lys Glu Lys Ile His Leu Glu Tyr Leu
 20 25 30
 Leu Asn Ala Thr Ser Lys Asn Ile Leu Trp Ser Ala Ile Ser Thr Pro
 35 40 45
 Thr Gly Leu Glu Asp Trp Phe Ala Asp Lys Val Val Ser Asp Asp Lys
 50 55 60
 Thr Val Thr Phe Cys Trp Gly Lys Thr Glu Gln Arg Gln Ala Gly Ile
 65 70 75 80
 Val Ala Ile Arg Ala Tyr Ser Phe Ile Arg Phe His Trp Leu Asp Asp
 85 90 95
 Glu Asn Glu Arg Asp Tyr Phe Glu Ile Lys Met Ser Tyr Asn Pro
 100 105 110

<210> 10063
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 10063
 Leu Thr Thr Val Gly Asn Ile Arg Thr Lys Arg Ser Thr Asp Ser Gly
 1 5 10 15
 Asn Gln Cys Asn Gly Pro Glu Asn Thr Gly Ala Trp Lys Pro Val Thr
 20 25 30
 Ala Glu Thr Thr Met Leu Glu Lys Ala Ala Pro Ala Lys Val Tyr Phe
 35 40 45
 Asn Thr Val Asn Ile Pro Thr Asp Phe Ser Ile Arg Leu Leu Ala Thr
 50 55 60
 Arg
 65

<210> 10064
 <211> 212
 <212> PRT
 <213> B.fragilis

<400> 10064
 Ser Arg Thr Val Met Lys Thr Met Lys Tyr Ile Ser Leu Arg Val Leu
 1 5 10 15
 Ala Ile Ala Ala Leu Ala Leu Ala Phe Ala Met Pro Ala Lys Ala Gln
 20 25 30
 Leu Ser Asp Asn Gly Tyr Ala Asn Val Asp Trp Gln Phe Asn Ala Pro
 35 40 45
 Leu Lys Asn His Phe Ala Asp Lys Ala Ser Gly Trp Gly Met Asn Phe

50		55		60
Glu Gly Gly Tyr Phe Val Thr Pro Asn Leu Gly	Leu Gly Leu Phe Met			
65	70	75	80	
Asn Tyr Ser Ser Asn His Glu Tyr Phe Pro Arg Ala Thr Phe Pro Val				
	85	90	95	
Gly Glu Gly Thr Val Asn Thr Asp Gln Gln His Thr Ile Phe Gln Leu				
	100	105	110	
Pro Phe Gly Ala Ala Ala Arg Tyr Gln Met Asn Arg Gly Gly Ala Trp				
	115	120	125	
Gln Pro Tyr Phe Gly Val Lys Leu Gly Ala Asn Tyr Ala Lys Val Arg				
	130	135	140	
Ser Asn Tyr Asn Met Phe Glu Thr Arg Asp Asn Thr Trp Gly Phe Tyr				
145	150	155	160	
Val Ser Pro Glu Ile Gly Leu Asn Val Tyr Pro Trp Ala Tyr Gly Pro				
	165	170	175	
Gly Leu His Ile Ala Val Tyr Tyr Ser Tyr Ala Thr Asn Lys Ala Asn				
	180	185	190	
Val Leu Thr Tyr Asn Val Asp Lys Leu Asn Asn Phe Gly Phe Arg Val				
	195	200	205	
Gly Leu Ala Phe				
210				

<210> 10065
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 10065
Arg Lys Tyr Val Gly Val Pro Ala Ile Asn Thr Val Val Glu Thr Val
1 5 10 15
Asp Thr Ser Phe Gly Ile Arg Asp Asn Val Leu Thr Val Gly Leu Leu
20 25 30
Thr Asn Lys Ser Gly Met Trp Tyr Glu Cys Trp Gly Gly Thr Leu Arg
35 40 45
Trp Phe Lys Thr Lys Arg Ser Leu Pro Arg Glu Val Arg Gly Ile Gly
50 55 60
Phe Lys Pro Thr Pro Leu Thr Phe
65 70

<210> 10066
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 10066
Ser Thr Ser Thr Pro Phe Asn Gly Leu Phe Arg Gln Ser Ala Ala Leu
1 5 10 15
Ser Leu Leu Arg Leu His Ile Thr Pro Thr Gly Ser Thr Gly Ile Leu
20 25 30
Thr Cys Ser Ala Ile Gly Leu Thr Val Arg Leu Ser Leu Arg Thr Arg
35 40 45
Leu Thr Leu Ile Arg Leu Ala Leu Ile Arg Lys Pro
50 55 60

<210> 10067
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 10067

Ser His Ala Ala Leu Ser Leu Gln Gln Ala Phe Val Glu Ser Gln Ala
 1 5 10 15
 Thr Glu Ser Leu Leu Gln Gln Val Ala Ala Asp Ser Ala Ala Ser Thr
 20 25 30
 Ala Thr Glu Val Glu Ser Ala Ala Ala Ser Glu Leu Ala Val Leu Leu
 35 40 45
 Pro Pro His Glu Thr Ile Ala Lys Glu Asn Ala Thr Ile Ala Ala Ala
 50 55 60
 Lys Lys Asn Phe Val Phe Ile Leu Lys Ile Phe Ala Leu Asn Val Tyr
 65 70 75 80
 Lys Tyr Ser Ile Ala Asn Ile Asn Lys Asn Lys
 85 90

<210> 10068

<211> 337

<212> PRT

<213> B.fragilis

<400> 10068

Ile Met Lys Ala Leu Val Thr Gly Ala Ala Gly Phe Ile Gly Ser Tyr
 1 5 10 15
 Thr Val Lys Ala Leu Val Ala Gln Gly Cys Glu Val Val Gly Leu Asp
 20 25 30
 Asn Ile Asn Ser Tyr Tyr Asp Val Gln Leu Lys Tyr Asp Arg Leu Ala
 35 40 45
 Asp Thr Gly Ile Thr Lys Glu Ser Ile Glu Lys Asp Ile Leu Leu Pro
 50 55 60
 Ser Ala Lys Tyr Pro Ser Tyr Arg Phe Ile Lys Met Asp Leu Thr Asp
 65 70 75 80
 Arg Glu Gly Leu Thr Asn Leu Phe Lys Asp Glu His Phe Asp Ile Val
 85 90 95
 Val Asn Leu Ala Ala Gln Ala Gly Val Arg Tyr Ser Ile Glu Asn Pro
 100 105 110
 Tyr Ala Tyr Ile Glu Ser Asn Ile Val Gly Phe Leu Asn Leu Leu Glu
 115 120 125
 Cys Cys Arg His Tyr Pro Val Asn His Leu Val Tyr Ala Ser Ser Ser
 130 135 140
 Ser Ile Tyr Gly Leu Asn Asp Lys Val Pro Tyr Ala Glu Thr Asp Lys
 145 150 155 160
 Ala Asp Ser Pro Val Ser Leu Tyr Ala Ala Thr Lys Lys Ser Asn Glu
 165 170 175
 Leu Met Ala His Ala Tyr Ser Lys Leu Tyr Ser Ile Pro Thr Thr Gly
 180 185 190
 Val Arg Phe Phe Thr Val Tyr Gly Pro Trp Gly Arg Pro Asp Met Ala
 195 200 205
 Pro Cys Leu Phe Met Lys Ala Ile Leu Asn Gly Asp Pro Ile Lys Val
 210 215 220
 Phe Asn Asn Gly Gln Met Arg Arg Asp Phe Thr Tyr Ile Asp Asp Ile
 225 230 235 240
 Ile Ala Gly Leu Met Lys Ile Ile Ala His Pro Ser Ala Asp Pro Ile
 245 250 255
 Pro Phe Tyr Ile Tyr Asn Ile Gly Asn Ser Ala Pro Val Glu Leu Met
 260 265 270
 Asp Phe Ile Ser Val Ile Glu Lys Thr Ala Gly Lys Thr Ala Ile Lys
 275 280 285
 Gln Met Met Gly Met Gln Pro Gly Asp Val Val Cys Thr Tyr Ala Asp
 290 295 300
 Thr Gly Arg Leu Glu Lys Asp Phe Gly Tyr Lys Pro Ser Thr Ser Ile

305 310 315 320
 Glu Glu Gly Ile Gln Lys Phe Tyr Asp Trp Tyr Val Gly Tyr Phe Asn
 325 330 335
 Lys

<210> 10069
 <211> 474
 <212> PRT
 <213> B.fragilis

<400> 10069
 Phe Val Asn His Lys Ile Ile Asn Lys Lys Met Asn Thr Leu Phe Asp
 1 5 10 15
 Lys Ile Trp Asp Ala His Val Val Thr Thr Val Glu Asp Gly Pro Thr
 20 25 30
 Gln Leu Tyr Ile Asp Arg Leu Tyr Cys His Glu Val Thr Ser Pro Gln
 35 40 45
 Ala Phe Ala Gly Leu Arg Ala Arg Gly Ile Lys Val Phe Arg Pro Glu
 50 55 60
 Lys Val Tyr Cys Met Pro Asp His Asn Thr Pro Thr His Asp Gln Asp
 65 70 75 80
 Lys Pro Ile Glu Asp Pro Val Ser Lys Thr Gln Val Asp Thr Leu Thr
 85 90 95
 Lys Asn Ala Ala Asp Phe Gly Leu Thr His Tyr Gly Met Met Asp Lys
 100 105 110
 Arg Asn Gly Ile Ile His Val Val Gly Pro Glu Arg Gly Leu Thr Leu
 115 120 125
 Pro Gly Met Thr Ile Val Cys Gly Asp Ser His Thr Ser Thr His Gly
 130 135 140
 Ala Met Gly Ala Val Ala Phe Gly Ile Gly Thr Ser Glu Val Glu Met
 145 150 155 160
 Val Leu Ala Ser Gln Cys Ile Leu Gln Ser Arg Pro Lys Thr Met Arg
 165 170 175
 Ile Thr Val Asp Gly Lys Leu Gly Lys Gly Val Thr Ala Lys Asp Ile
 180 185 190
 Ala Leu Tyr Met Met Ser Lys Met Thr Thr Ser Gly Ala Thr Gly Tyr
 195 200 205
 Phe Val Glu Tyr Ala Gly Glu Ala Ile Arg Ser Leu Thr Met Glu Gly
 210 215 220
 Arg Leu Thr Leu Cys Asn Leu Ser Ile Glu Met Gly Ala Arg Gly Gly
 225 230 235 240
 Met Ile Ala Pro Asp Glu Val Thr Phe Glu Tyr Ile Lys Gly Arg Glu
 245 250 255
 Asn Ala Pro Gln Gly Glu Glu Trp Asp Gln Ala Val Gln Tyr Trp Lys
 260 265 270
 Thr Leu Lys Ser Glu Asp Asp Ala Val Phe Asp Lys Glu Val His Phe
 275 280 285
 Asp Ala Ala Asp Ile Glu Pro Met Ile Thr Tyr Gly Thr Asn Pro Gly
 290 295 300
 Met Gly Met Gly Ile Thr Gln His Ile Pro Thr Thr Asp Gly Met Asn
 305 310 315 320
 Glu Thr Thr Lys Ala Ser Phe Leu Lys Ser Leu Asp Tyr Met Gly Phe
 325 330 335
 Gln Pro Gly Glu Ala Leu Leu Gly Lys Lys Ile Asp Tyr Val Phe Leu
 340 345 350
 Gly Ala Cys Thr Asn Gly Arg Ile Glu Asp Phe Arg Ala Phe Ala Ser
 355 360 365
 Ile Val Lys Gly His Gln Lys Ala Glu His Val Ile Ala Trp Leu Val

10069 474 PRT B.fragilis

370	375	380
Pro Gly Ser Trp Met Val	Asp Ala Gln Ile Arg	Glu Glu Gly Leu Asp
385	390	395
Lys Ile Leu Glu Asp	Ala Gly Phe Ala Ile Arg	Gln Pro Gly Cys Ser
405	410	415
Ser Cys Leu Ala Met Asn	Asp Asp Lys Ile Pro	Ala Gly Lys Tyr Ser
420	425	430
Val Ser Thr Ser Asn Arg	Asn Phe Glu Gly Arg	Gln Gly Pro Gly Ala
435	440	445
Arg Thr Leu Leu Ala Ser	Pro Leu Val Ala Ala	Ala Ala Ala Ile Thr
450	455	460
Gly Val Ile Ala Asp	Pro Arg Glu Leu Met	
465	470	

<210> 10070
 <211> 201
 <212> PRT
 <213> B.fragilis

<400> 10070
Ile Val Asn Lys Lys Met Lys Ala Lys Phe Asn Ile Leu Thr Ser Thr
1 5 10 15
Cys Val Pro Leu Pro Leu Glu Asn Val Asp Thr Asp Gln Ile Ile Pro
20 25 30
Ala Arg Phe Leu Lys Ala Thr Thr Lys Glu Gly Phe Gly Glu Asn Leu
35 40 45
Phe Arg Asp Trp Arg Tyr Asp Lys Gln Gly Asn Lys Ile Asp Ser Phe
50 55 60
Val Leu Asn Asp Pro Thr Tyr Gly Gly Gln Ile Leu Val Ala Gly Lys
65 70 75 80
Asn Phe Gly Ser Gly Ser Ser Arg Glu His Ala Ala Trp Ala Ile Ala
85 90 95
Asp Tyr Gly Phe Arg Val Val Val Ser Ser Phe Phe Ala Asp Ile His
100 105 110
Lys Asn Asn Glu Leu Asn Asn Phe Val Leu Pro Val Val Val Thr Glu
115 120 125
Glu Phe Leu Ala Glu Leu Phe Asp Ser Ile Phe Lys Asn Pro Lys Met
130 135 140
Glu Val Glu Val Asn Leu Pro Glu Gln Thr Ile Thr Asn Lys Ala Thr
145 150 155 160
Gly Lys Ser Glu His Phe Glu Ile Asn Ala Tyr Lys Lys His Cys Leu
165 170 175
Met Asn Gly Leu Asp Asp Ile Asp Phe Leu Leu Thr Asn Lys Asp Lys
180 185 190
Ile Glu Gln Trp Glu Lys Ala Ser Lys
195 200

<210> 10071
 <211> 357
 <212> PRT
 <213> B.fragilis

<400> 10071
Leu Leu Asn Asn Met Asp Phe Lys Ile Ala Val Leu Ala Gly Asp Gly
1 5 10 15
Ile Gly Pro Glu Ile Ser Val Gln Gly Val Glu Val Met Ser Ala Val
20 25 30
Cys Glu Lys Phe Gly His Lys Val Asn Tyr Glu Tyr Ala Ile Cys Gly
35 40 45

Ala Asp Ala Ile Asp Lys Val Gly Asp Pro Phe Pro Glu Glu Thr Tyr
 50 55 60
 Arg Val Cys Lys Asn Ala Asp Ala Val Leu Phe Ser Ala Val Gly Asp
 65 70 75 80
 Pro Lys Phe Asp Asn Asp Pro Thr Ala Lys Val Arg Pro Glu Gln Gly
 85 90 95
 Leu Leu Ala Met Arg Lys Lys Leu Gly Leu Phe Ala Asn Ile Arg Pro
 100 105 110
 Val Gln Thr Phe Lys Cys Leu Val His Lys Ser Pro Leu Arg Ala Glu
 115 120 125
 Leu Val Glu Gly Ala Asp Phe Leu Cys Ile Arg Glu Leu Thr Gly Gly
 130 135 140
 Met Tyr Phe Gly Glu Lys Tyr Gln Asp Asn Asp Lys Ala Tyr Asp Thr
 145 150 155 160
 Asn Met Tyr Thr Arg Pro Glu Ile Glu Arg Ile Leu Lys Val Gly Phe
 165 170 175
 Glu Tyr Ala Met Lys Arg Arg Lys His Leu Thr Val Val Asp Lys Ala
 180 185 190
 Asn Val Leu Ala Ser Ser Arg Leu Trp Arg Gln Ile Ala Gln Glu Met
 195 200 205
 Ala Pro Gln Tyr Pro Glu Val Thr Thr Asp Tyr Met Phe Val Asp Asn
 210 215 220
 Ala Ala Met Lys Met Ile Gln Glu Pro Lys Phe Phe Asp Val Met Val
 225 230 235 240
 Thr Glu Asn Thr Phe Gly Asp Ile Leu Thr Asp Glu Gly Ser Val Ile
 245 250 255
 Ser Gly Ser Met Gly Leu Leu Pro Ser Ala Ser Thr Gly Glu Ser Thr
 260 265 270
 Pro Val Phe Glu Pro Ile His Gly Ser Trp Pro Gln Ala Lys Gly Leu
 275 280 285
 Asn Ile Ala Asn Pro Leu Ala Gln Ile Leu Ser Val Ala Met Leu Phe
 290 295 300
 Glu Tyr Phe Asp Cys Lys Ala Glu Gly Ala Leu Ile Arg Lys Ala Val
 305 310 315 320
 Asp Ala Ser Leu Asp Ala Asn Val Arg Thr Pro Glu Ile Gln Val Glu
 325 330 335
 Gly Gly Glu Lys Phe Gly Thr Lys Glu Val Gly Ala Trp Ile Val Asp
 340 345 350
 Tyr Ile Arg Lys Ala
 355

<210> 10072

<211> 528

<212> PRT

<213> B.fragilis

<400> 10072

Leu Asp Val Lys Ala Pro Ser Asn Gln Leu Pro Met Lys Ser Lys Phe
 1 5 10 15
 Leu Pro Phe Leu Leu Leu Leu Ala Val Leu Pro Val Leu Ile Phe Arg
 20 25 30
 Asp Tyr Thr Pro Ser Asn Glu Leu Arg Tyr Leu Ser Ile Val Asp Glu
 35 40 45
 Ala Leu Arg Asn Gly Asp Ile Phe Thr Phe Thr Asn His Gly Ile Gln
 50 55 60
 Tyr Ala Asp Lys Pro Pro Leu Tyr Phe Trp Ile Leu Met Leu Gly Lys
 65 70 75 80
 Trp Leu Leu Gly Asn His Ala Met Trp Phe Ala Ser Leu Phe Ser Phe
 85 90 95

Ile	Pro	Ala	Leu	Val	Ile	Met	Leu	Val	Met	Asp	Arg	Trp	Val	Glu	Arg
			100					105					110		
Glu	Val	Ser	Val	Ala	Asn	Arg	Leu	Ser	Ala	Gln	Leu	Met	Leu	Met	Ser
			115					120					125		
Cys	Gly	Leu	Phe	Leu	Gly	Leu	Ala	Val	Val	Leu	Arg	Met	Asp	Met	Leu
			130				135						140		
Met	Cys	Met	Phe	Ile	Val	Leu	Ala	Leu	Arg	Thr	Phe	Tyr	Gln	Met	Leu
145					150					155					160
Lys	Gly	Gln	Gly	Ser	Lys	Asn	Trp	Asn	Gln	Phe	Leu	Phe	Pro	Phe	Tyr
				165					170						175
Ile	Phe	Met	Ala	Val	Phe	Ser	Lys	Gly	Pro	Val	Gly	Ile	Leu	Val	Pro
			180					185					190		
Leu	Gly	Ser	Thr	Phe	Ile	Phe	Leu	Leu	Ile	Thr	Gly	Arg	Val	Lys	Thr
			195				200					205			
Phe	Gly	Arg	Tyr	Trp	Gly	Trp	Lys	Thr	Phe	Ala	Val	Leu	Leu	Leu	Gly
			210				215				220				
Cys	Phe	Ile	Trp	Phe	Gly	Gly	Val	Cys	Trp	Glu	Glu	Gly	Gly	Leu	Thr
225					230					235					240
Tyr	Leu	His	Asp	Leu	Leu	Phe	Arg	Gln	Thr	Val	Gly	Arg	Ala	Val	Asn
				245					250					255	
Ala	Phe	Asp	His	Ser	Ala	Pro	Phe	Tyr	Tyr	Tyr	Phe	Ile	Ser	Val	Trp
			260					265					270		
Tyr	Ser	Leu	Ala	Pro	Trp	Ala	Leu	Phe	Leu	Val	Gly	Ile	Ile	Ile	Ala
			275				280					285			
Gly	Ala	Cys	Arg	Arg	Leu	Ile	Arg	Ser	Asp	Met	Glu	Arg	Phe	Phe	Met
			290				295				300				
Val	Ile	Ile	Leu	Thr	Thr	Leu	Leu	Met	Leu	Ser	Cys	Phe	Ser	Gly	Lys
305					310					315					320
Leu	Ala	Val	Tyr	Leu	Ala	Pro	Thr	Phe	Pro	Phe	Phe	Val	Tyr	Leu	Ala
				325					330					335	
Val	Leu	Leu	Leu	Ser	His	Phe	Arg	Trp	Asn	Gln	Trp	Leu	Ala	Leu	Thr
				340				345					350		
Leu	Leu	Leu	Pro	Ala	Val	Val	Phe	Val	Ala	Gly	Leu	Pro	Ala	Leu	Ile
			355				360					365			
Val	Leu	Gly	Arg	Met	Pro	Gly	Thr	Glu	Phe	Leu	Gly	Gln	Lys	Leu	Phe
			370				375				380				
Tyr	Val	Ala	Gly	Gly	Ile	Leu	Thr	Val	Ser	Gly	Gly	Thr	Ala	Leu	Tyr
385					390					395					400
Phe	Leu	Tyr	Arg	Lys	Lys	Ser	Leu	Asn	Lys	Thr	Ile	Asn	Val	Leu	Ala
				405					410					415	
Leu	Gly	Leu	Phe	Cys	Ala	Val	Phe	Val	Gly	Gly	Trp	Asp	Val	Pro	Ala
			420					425					430		
Ile	Asn	Gly	Glu	Leu	Gly	Tyr	Ser	Glu	Leu	Cys	Arg	Lys	Ala	Val	Glu
			435				440					445			
Leu	Ser	Lys	Glu	Lys	Asn	Val	Ser	Gly	Tyr	Cys	Val	Leu	Asn	Val	Arg
			450				455				460				
Arg	Ser	Glu	Asn	Met	Asp	Val	Tyr	Leu	His	Glu	Arg	Val	Lys	Glu	Val
465					470					475					480
Thr	Glu	Glu	Glu	Val	Leu	Asp	Asn	Lys	Tyr	Gln	Asn	Thr	Ile	Leu	Met
				485					490					495	
Ile	Ser	Asn	Lys	Lys	Ile	Arg	Ser	Asn	Lys	Lys	Leu	Glu	Glu	Phe	Val
			500					505					510		
Asn	Gly	Lys	Glu	His	Tyr	Val	Ile	Gly	Arg	Phe	Ser	Val	Met	Val	Leu
			515				520					525			

<210> 10073

<211> 63

<212> PRT

<213> B.fragilis

<400> 10073

Pro Pro Thr Lys Leu Asp Asp Ile Pro Ser Glu Cys Arg Val Val Pro
 1 5 10 15
 Phe Gly Asn Leu Arg Ile Lys Gly His Leu His Leu Pro Glu Ala Tyr
 20 25 30
 Arg Ser Leu Ser Arg Pro Ser Ser Pro Pro Arg Ala Lys Ala Ser Ala
 35 40 45
 Met Arg Pro Tyr Leu Leu Ser Phe Ile Ala Arg Asp His Phe Leu
 50 55 60

<210> 10074

<211> 1032

<212> PRT

<213> B.fragilis

<400> 10074

Cys Met Thr Lys Arg Thr Asn Leu Phe Pro Ser Leu Ile Lys Thr Arg
 1 5 10 15
 Glu Met Asn Cys Leu Lys Ile Ala Gly Ala Ser Leu Leu Leu Leu Cys
 20 25 30
 Ile Ser Pro Gln Phe Ala Val Ala Asp Gly Leu Lys Gln Asp Ala Val
 35 40 45
 Thr Ile Met Gln Gln Gln Asn Leu Lys Val Ser Gly Val Val Thr Asp
 50 55 60
 Glu Ala Gly Glu Pro Leu Ile Gly Val Ser Val Leu Val Lys Gly Thr
 65 70 75 80
 Thr Leu Gly Asn Ile Thr Asp Leu Asn Gly Arg Phe Ser Leu Asp Val
 85 90 95
 Pro Glu Gly Ser Ile Leu Glu Ile Ser Tyr Ile Gly Tyr Lys Thr Gln
 100 105 110
 Ser Ile Lys Ala Gln Arg Glu Pro Met Asn Ile Val Leu Lys Glu Asp
 115 120 125
 Ala Gln Lys Leu Asp Glu Val Val Val Val Gly Phe Gly Thr Gln Lys
 130 135 140
 Lys Val Asn Leu Thr Gly Ser Val Ser Ala Val Thr Gly Asp Asp Ile
 145 150 155 160
 Ser Lys Arg Pro Val Ala Asn Ala Ala Ile Leu Leu Gln Gly Gln Ile
 165 170 175
 Pro Gly Leu Arg Val Asn Gln Gly Leu Gly Gln Pro Gly Gly Glu Gly
 180 185 190
 Thr Ser Phe Arg Ile Arg Gly Gln Gly Thr Phe Ser Ser Ala Gly Ser
 195 200 205
 Asp Pro Leu Ile Leu Ile Asn Gly Val Pro Gly Ser Met Thr Asn Leu
 210 215 220
 Asp Pro Ser Val Ile Glu Ser Val Ser Val Leu Lys Asp Ala Ala Ser
 225 230 235 240
 Ala Ala Ile Tyr Gly Ala Arg Ala Ala Asn Gly Val Ile Leu Val Thr
 245 250 255
 Thr Lys Gln Gly Ala Val Gly Asp Lys Val His Ile Ser Tyr His Gly
 260 265 270
 Asn Val Gly Leu His Thr Pro Thr Lys Leu Tyr Asp Arg Val Thr Asn
 275 280 285
 Ser Val Glu Tyr Met Glu Leu Ala Asn Leu Ala Trp Lys Asn Ser Gly
 290 295 300
 Thr Gly Lys Gln Tyr Thr Gln Asp Gln Ile Asn Leu Tyr Arg Asn Asn
 305 310 315 320
 Val Gly Asp Pro Gln Tyr Pro Asn Phe Asp Trp Gln Asp Tyr Met Phe
 325 330 335

Arg	Thr	Ala	Val	Val	Gln	Thr	His	Asn	Leu	Ser	Met	Ala	Gly	Ser	Thr
			340					345					350		
Glu	Lys	Thr	Thr	Tyr	Asn	Val	Ala	Leu	Asn	Phe	Val	Asp	Gln	Pro	Gly
		355					360					365			
Thr	Met	Arg	Gly	Phe	Lys	Tyr	Arg	Lys	Tyr	Asn	Ala	Thr	Ile	Asp	Leu
		370					375				380				
Thr	Ala	Arg	Ile	Thr	Asn	Phe	Ile	Lys	Val	Gly	Thr	Tyr	Ala	Asn	Leu
385					390					395					400
Met	Tyr	Gly	Glu	Thr	Glu	Gln	Pro	Arg	Gln	Gly	Gln	Asn	Asp	Ala	Phe
				405					410					415	
Leu	Ser	Thr	Leu	Ser	Gln	Ala	Pro	Thr	Tyr	Met	Pro	Trp	Leu	Pro	Asp
			420					425					430		
Asp	Gly	Thr	Gly	Ile	Arg	Arg	Trp	Thr	Ser	Ser	Ala	Tyr	Ser	Phe	Glu
		435					440					445			
Ser	His	Asn	Lys	Asn	Met	Pro	Ala	Ile	Ile	Gly	Asp	Asp	Ala	Met	Lys
		450				455					460				
Arg	Asp	Asn	Asn	Phe	Asp	Ile	Asn	Ala	Gln	Leu	Trp	Leu	Glu	Ile	Asn
465					470					475					480
Leu	Ala	Lys	Gly	Leu	Thr	Trp	Tyr	Thr	Lys	Gly	Ala	Ala	Arg	Leu	Gln
				485					490					495	
Ser	Asn	Lys	Ser	Lys	Asp	Trp	Arg	Gly	Ser	Thr	Thr	Tyr	Thr	Tyr	Asp
			500					505					510		
Tyr	His	Thr	Gly	Glu	Arg	Ser	Ser	Glu	Leu	Asp	Lys	Gly	Gly	Leu	Gly
		515					520					525			
Leu	Ser	Val	Gly	Asp	Gly	Arg	Arg	Phe	Tyr	Thr	Asn	Leu	Tyr	Ser	Tyr
		530				535					540				
Leu	Lys	Tyr	Asp	Leu	Ser	Leu	Val	Asp	Asn	Ala	His	Asn	Phe	Ser	Leu
545					550				555						560
Met	Val	Gly	Tyr	Asn	Gln	Glu	Ser	Glu	Lys	Tyr	Glu	Thr	Leu	Asn	Ala
				565					570					575	
Tyr	Arg	Lys	Asp	Phe	Ala	Phe	Asp	Leu	Pro	Val	Leu	Asn	Ala	Gly	Gly
			580					585					590		
Thr	Ala	Asp	Trp	Ser	Asn	Ser	Gly	Gly	Glu	Glu	Glu	Trp	Ala	Ile	Gln
		595					600					605			
Ser	Leu	Phe	Gly	Arg	Phe	Asn	Tyr	Asp	Phe	Lys	Glu	Arg	Tyr	Leu	Phe
		610				615					620				
Glu	Ala	Asn	Met	Arg	Tyr	Asp	Gly	Thr	Ser	Arg	Ile	Ser	Asp	Glu	Asn
625					630					635					640
Arg	Trp	Gly	Val	Phe	Pro	Ser	Phe	Ser	Val	Ala	Trp	Arg	Ala	Thr	Glu
				645					650					655	
Glu	Glu	Phe	Ile	Lys	Asn	Leu	Asn	Leu	Asn	Trp	Leu	Asn	Asn	Phe	Lys
			660					665					670		
Leu	Arg	Gly	Ser	Trp	Gly	Gln	Leu	Gly	Asn	Gln	Asn	Ile	Gly	Leu	Tyr
		675					680					685			

805 810 815
 Leu Thr Glu Phe Gly Ala Glu Glu Ile Gly Ser Tyr Ser Ile Lys Arg
 820 825 830
 Glu Gly Leu Pro Tyr Asp Glu Tyr Tyr Met Leu Glu Cys Ile Gly Val
 835 840 845
 Phe Ala Asp Gln Ala Glu Ile Asn Ala Ser Pro Lys Gln Phe Asn Asp
 850 855 860
 Asn Thr Gln Pro Gly Asp Leu Lys Tyr Lys Asp Ile Ser Gly Pro Asp
 865 870 875 880
 Gly Lys Pro Asp Gly Val Ile Asp Asn Tyr Asp Arg Arg Thr Phe Ser
 885 890 895
 Gly Arg Phe Pro Gly Phe Glu Tyr Gly Ile Asn Ala Ser Ala Thr Trp
 900 905 910
 Lys Gly Phe Asp Leu Ser Leu Ile Gly Gln Gly Val Ala Asp Lys Lys
 915 920 925
 Tyr Tyr Thr Thr Asp Trp Gly Val Gln Pro Phe Met Gln Gly Ser Ser
 930 935 940
 Pro Asn Lys Asp Tyr Ile Lys His Met Trp Thr Glu Glu Asn Pro Tyr
 945 950 955 960
 Gly Ala Lys His Pro Lys Leu Tyr Trp Gln Asp Met Gly Gly Gly Lys
 965 970 975
 Asn Thr Arg Pro Asn Ser Tyr Tyr Leu Lys Asp Ala Ser Phe Phe Arg
 980 985 990
 Leu Lys Asn Val Thr Leu Gly Tyr Thr Leu Pro Arg Val Trp Thr Glu
 995 1000 1005
 Lys Ala Asn Ile Ser Lys Val Arg Ile Tyr Phe Ser Gly Asp Asn Leu
 1010 1015 1020
 Leu Thr Leu Val Phe Thr Thr Gly
 1025 1030

<210> 10075

<211> 60

<212> PRT

<213> B.fragilis

<400> 10075

Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe
 1 5 10 15
 Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe
 20 25 30
 Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu
 35 40 45
 Arg Ala Thr Gln Asp Thr Thr Thr Leu Arg Leu Pro
 50 55 60

<210> 10076

<211> 88

<212> PRT

<213> B.fragilis

<400> 10076

Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val
 1 5 10 15
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val
 20 25 30
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln
 35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr
 50 55 60

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Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 10077
 <211> 500
 <212> PRT
 <213> B.fragilis

<400> 10077

Lys Asn Met Ser Asp Arg Leu Phe Ile Phe Asp Thr Thr Leu Arg Asp
 1 5 10 15
 Gly Glu Gln Val Pro Gly Cys Gln Leu Asn Thr Val Glu Lys Ile Gln
 20 25 30
 Val Ala Lys Ala Leu Glu Val Leu Gly Val Asp Val Ile Glu Ala Gly
 35 40 45
 Phe Pro Ile Ser Ser Pro Gly Asp Phe Asn Ser Val Ile Glu Ile Ser
 50 55 60
 Lys Ala Val Thr Trp Pro Thr Ile Cys Ala Leu Thr Arg Ala Val Gln
 65 70 75 80
 Lys Asp Ile Asp Val Ala Val Asp Ala Leu Lys Phe Ala Lys His Lys
 85 90 95
 Arg Ile His Thr Gly Ile Gly Thr Ser Asp Ser His Ile Lys Tyr Lys
 100 105 110
 Phe Asn Ser Thr Arg Glu Glu Ile Ile Glu Arg Ala Val Ala Ala Val
 115 120 125
 Lys Tyr Ala Arg Arg Phe Val Asp Asp Val Glu Phe Tyr Ala Glu Asp
 130 135 140
 Ala Gly Arg Thr Asp Asn Glu Tyr Leu Ala Arg Val Ile Glu Ala Val
 145 150 155 160
 Ile Lys Ala Gly Ala Thr Val Val Asn Ile Pro Asp Thr Thr Gly Tyr
 165 170 175
 Cys Leu Pro Ser Glu Tyr Gly Ala Lys Ile Lys Tyr Leu Val Asp His
 180 185 190
 Val Ala Gly Ile Glu Asn Ala Ile Ile Ser Thr His Cys His Asn Asp
 195 200 205
 Leu Gly Met Ala Thr Ala Asn Thr Met Ala Gly Ile Leu Asn Gly Ala
 210 215 220
 Arg Gln Val Glu Val Thr Ile Asn Gly Ile Gly Glu Arg Ala Gly Asn
 225 230 235 240
 Thr Ala Leu Glu Glu Ile Ala Met Ile Ile Lys Ser His His Glu Ile
 245 250 255
 Asp Ile Glu Thr Asn Ile Asn Thr Gln Lys Ile Tyr Pro Thr Ser Arg
 260 265 270
 Met Val Ser Ser Leu Met Asn Met Pro Val Gln Ala Asn Lys Ala Ile
 275 280 285
 Val Gly Arg Asn Ala Phe Ala His Ser Ser Gly Ile His Gln Asp Gly
 290 295 300
 Val Leu Lys Asn Val Gln Thr Tyr Glu Ile Ile Asp Pro His Asp Val
 305 310 315 320
 Gly Ile Asp Asp Asn Ser Ile Val Leu Thr Ala Arg Ser Gly Arg Ala
 325 330 335
 Ala Leu Lys Asn Arg Leu Ser Ile Leu Gly Val Thr Leu Asp Gln Glu
 340 345 350
 Lys Leu Asp Lys Val Tyr Glu Glu Phe Leu Lys Leu Ala Asp Arg Lys
 355 360 365
 Lys Asp Ile His Asp Asp Asp Ile Leu Val Leu Ala Gly Ala Asp Arg
 370 375 380

10077
 500
 PRT
 B.fragilis

Ser Gly Asn His Arg Ile Lys Leu Glu Tyr Leu Gln Val Thr Ser Gly
 385 390 395 400
 Val Gly Val Arg Ser Val Ala Ser Leu Gly Leu Asn Ile Ala Gly Glu
 405 410 415
 Lys Phe Glu Ala Ala Ser Gly Asn Gly Pro Val Asp Ala Ala Ile
 420 425 430
 Lys Ala Leu Lys Arg Ile Ile Asp Arg His Met Thr Leu Lys Glu Phe
 435 440 445
 Thr Ile Gln Ala Ile Ser Lys Gly Ser Asp Asp Val Gly Lys Val His
 450 455 460
 Met Gln Val Glu Tyr Asp Asn Gln Met Tyr Tyr Gly Phe Gly Ala Asn
 465 470 475 480
 Thr Asp Ile Ile Ala Ala Ser Val Glu Ala Tyr Ile Asp Cys Ile Asn
 485 490 495
 Lys Phe Thr Lys
 500

<210> 10078
 <211> 512
 <212> PRT
 <213> B.fragilis

<400> 10078

Asn Arg Thr Met Gly Lys Gly Val Lys Ile Glu Ile Met Asp Thr Thr
 1 5 10 15
 Leu Arg Asp Gly Glu Gln Thr Ser Gly Val Ser Phe Val Pro His Glu
 20 25 30
 Lys Leu Met Ile Ala Arg Leu Leu Leu Glu Glu Leu Lys Val Asp Arg
 35 40 45
 Val Glu Val Ala Ser Ala Arg Val Ser Asp Gly Glu Phe Asp Ala Val
 50 55 60
 Lys Met Ile Cys Asp Trp Ala Ala Arg Arg Asn Leu Leu Gln Lys Val
 65 70 75 80
 Glu Val Leu Gly Phe Val Asp Gly His Thr Ser Leu Asp Trp Ile His
 85 90 95
 Ala Thr Gly Cys Arg Val Ile Asn Leu Leu Cys Lys Gly Ser Leu Lys
 100 105 110
 His Cys Thr Cys Gln Leu Lys Lys Thr Pro Glu Lys His Ile Glu Asp
 115 120 125
 Ile Leu Ala Val Val Asp Tyr Ala Asn Glu Leu Asp Ile Glu Val Asn
 130 135 140
 Val Tyr Leu Glu Asp Trp Ser Asn Gly Met Lys Asp Ser Pro Glu Tyr
 145 150 155 160
 Val Phe Arg Ile Val Asp Ala Leu Lys Glu Thr Thr Ile Lys Arg Phe
 165 170 175
 Met Leu Pro Asp Thr Leu Gly Ile Leu Asn Pro Leu Gln Val Ile Glu
 180 185 190
 Phe Met Arg Lys Met Lys Lys Arg Tyr Pro Asp Thr His Phe Asp Phe
 195 200 205
 His Ala His Asn Asp Tyr Asp Leu Ala Val Ser Asn Val Leu Ala Ala
 210 215 220
 Val Leu Ser Gly Val Lys Gly Leu His Thr Thr Ile Asn Gly Leu Gly
 225 230 235 240
 Glu Arg Ala Gly Asn Ala Pro Leu Ala Ser Val Gln Ala Ile Leu Lys
 245 250 255
 Asp His Phe Asn Ala Ile Thr Asn Ile Asp Glu Ser Arg Leu Asn Asp
 260 265 270
 Val Ser Arg Val Val Glu Ser Tyr Ser Gly Ile Val Ile Pro Ala Asn
 275 280 285

Lys Pro Ile Val Gly Glu Asn Val Phe Thr Gln Val Ala Gly Val His
 290 295 300
 Ala Asp Gly Asp Asn Lys Ser Asn Leu Tyr Cys Asn Asp Leu Leu Pro
 305 310 315 320
 Glu Arg Phe Gly Arg Val Arg Glu Tyr Ala Leu Gly Lys Thr Ser Gly
 325 330 335
 Lys Ala Asn Ile Arg Lys Asn Leu Glu Ser Leu Gly Leu Glu Leu Asp
 340 345 350
 Glu Glu Ser Met Lys Lys Val Thr Glu Arg Ile Ile Glu Leu Gly Asp
 355 360 365
 Lys Lys Glu Leu Val Thr Gln Glu Asp Leu Pro Tyr Ile Ile Ser Asp
 370 375 380
 Val Leu Lys His Asp Gly Met Ser Asn Lys Val Lys Leu Lys Ser Tyr
 385 390 395 400
 Phe Val Thr Leu Ala His Gly Leu Lys Pro Met Ala Thr Leu Ser Ile
 405 410 415
 Glu Ile Asp Gly Gln Val Tyr Glu Glu Ser Ser Ser Gly Asp Gly Gln
 420 425 430
 Tyr Asp Ala Phe Val Arg Ala Leu Arg Lys Ile Tyr Lys Val Thr Leu
 435 440 445
 Gly Arg Lys Phe Pro Met Leu Ile Asn Tyr Ala Val Ser Ile Pro Pro
 450 455 460
 Gly Gly Arg Thr Asp Ala Phe Val Gln Thr Val Ile Thr Trp Ser Phe
 465 470 475 480
 Gly Glu Lys Val Phe Arg Thr Arg Gly Leu Asp Ala Asp Gln Thr Glu
 485 490 495
 Ala Ala Ile Lys Ala Thr Ile Lys Met Leu Asn Ile Ile Glu Glu Tyr
 500 505 510

<210> 10079
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 10079
 Pro Tyr Arg Met Val Pro Ala Asp Ser Arg Arg Ile Pro Arg Ala Pro
 1 5 10 15
 Arg Tyr Ser Gly Tyr His Tyr Ala Ser Val Thr Leu Glu Tyr Arg Ala
 20 25 30
 Ile Thr Val Tyr Gly Thr Thr Phe Gln Ser Phe Leu Leu Asn Asn Cys
 35 40 45
 Leu Ala Arg Ala Trp Ser Tyr Asn Pro Thr His Ala Val Thr Trp Val
 50 55 60
 Val Trp Ala Asn Pro Arg Ser Leu Ala Thr Thr Arg Gly Ile Ile Ile
 65 70 75 80
 Tyr Phe Leu Phe Leu Gln Val Leu Arg Cys Phe Ser Ser Leu Arg
 85 90 95

<210> 10080
 <211> 218
 <212> PRT
 <213> B.fragilis

<400> 10080
 Arg Lys Phe Val Lys Gly Ser Gly Phe Ile Tyr Val Ile Gly Phe Leu
 1 5 10 15
 Ala Gln Ala Phe Phe Ser Ala Arg Ile Ile Phe Gln Trp Ile Leu Ser
 20 25 30
 Glu Arg Ala Lys Lys Val Val Ser Pro Ser Ile Phe Trp Ile Leu Ser

35	40	45
Ile Ala Gly Ser Tyr Leu	Leu Cys Ile Tyr Gly Trp	Leu Arg Asp Asp
50	55	60
Phe Ser Ile Ile Phe Gly Gln Phe Ile Ser Tyr Tyr	Ile Tyr Leu Trp	
65	70	75
Asn Leu Asn Glu Lys Gly Ile Trp Asn Lys Leu His Gly Ala Leu Lys		80
85	90	95
Thr Leu Leu Val Ile Thr Pro Val Ile Ala Ala Ala Phe Met Leu His		
100	105	110
Asp Ala Gln His Phe Ile Asp Ser Phe Phe Arg Asn Glu Glu Val Pro		
115	120	125
Leu Trp Leu Leu Ile Phe Gly Ser Met Gly Gln Ile Ile Phe Thr Leu		
130	135	140
Arg Phe Val Tyr Gln Trp Ala Tyr Ser Phe His His Lys Glu Ser Leu		
145	150	155
Leu Pro Ala Gly Phe Trp Ile Ile Ser Leu Val Gly Ser Ser Val Ile		
165	170	175
Val Ala Tyr Gly Val Phe Arg Leu Asp Pro Val Leu Ile Leu Gly Gln		
180	185	190
Ser Val Gly Phe Val Ala Tyr Phe Arg Asn Leu Met Ile Gly Arg Lys		
195	200	205
Ser Ser Lys Gln Ser Val Ala Tyr Glu Lys		
210	215	

<210> 10081

<211> 269

<212> PRT

<213> B.fragilis

<400> 10081

Ile Trp Ile Val Val Ser Ile Ile Leu Phe Tyr Phe Ile Phe Phe Val		
1	5	10
Leu Leu Arg Asp Ile Tyr Asn Glu Ala Met Asn Lys Thr Ile Asn Tyr		
20	25	30
Gln Leu Thr Ile Val Val Pro Val Tyr Asn Glu Glu Asp Asn Ile Tyr		
35	40	45
Ser Leu Glu Gln Lys Leu Gly Glu Phe Leu Pro Lys Ser Ile Cys Thr		
50	55	60
Ala Cys Val Leu Phe Val Asn Asp Gly Ser Arg Asp Asn Ser Lys Gln		
65	70	75
Arg Ile Met Glu Val Cys Ala Arg Asn Lys Asp Phe Phe Tyr Met Asp		
85	90	95
Leu Ala Lys Asn Ser Gly Leu Ser Ala Ala Met Lys Ala Gly Ile Asp		
100	105	110
Tyr Thr Glu Ser Val Tyr Val Gly Tyr Met Asp Ala Asp Leu Gln Thr		
115	120	125
Thr Pro Glu Asp Phe Asn Leu Leu Leu Lys Asp Ile Ala Asp Tyr Gln		
130	135	140
Leu Val Met Gly Ile Arg Ala Asn Arg Lys Asp Ser Phe Phe Lys Asn		
145	150	155
Leu Gln Ser Lys Ile Ala Asn Gly Phe Arg Arg Met Met Thr Asn Asp		
165	170	175
Gly Val Gln Asp Thr Gly Cys Pro Leu Lys Val Leu His Thr Ala Tyr		
180	185	190
Ala Lys Arg Ile Pro Phe Phe Thr Gly Met His Arg Phe Leu Pro Ala		
195	200	205
Leu Ile Leu Leu Gln Asp Ala Lys Ile Lys Gln Ile Pro Val Arg His		
210	215	220
Phe Pro Arg Val Ala Gly Thr Ser Lys Tyr His Leu Trp Asn Arg Leu		

<400> 10084
Gln Pro Ser Ser Asn Trp Lys Ala Met Lys Lys Gln Arg Asn Glu Lys

[illegible]

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1           5           10           15
Pro Ile Asp Glu Glu Leu Leu Met Arg Met Met Ala Gly Glu Ala Ala
                20                25                30
Gly Thr Gly Glu Pro Gly Thr Gly Lys Gly Glu Thr Ala Val Pro Val
                35                40                45
Glu Lys Ala Gln Glu Gly Lys Ala Ala Asp Thr Arg Arg Arg Lys Gly
                50                55                60
Arg Gln Ala Asp Tyr Glu Thr Thr Phe Phe Lys Gly Met Asp Ile Pro
65                70                75                80
Ala Arg Tyr Gly Lys Pro Val Tyr Val Arg Arg Glu Tyr His Glu Arg
                85                90                95
Ile Ala Lys Ile Ser Val Met Leu Thr Gly Gly Lys Val Ser Leu Ser
                100               105               110
Ala Tyr Ile Asp Asn Val Leu Ala Gln His Phe Glu Gln Tyr Arg Glu
                115               120               125
Glu Ile Glu Ala Ala Tyr Ala Gly Lys Leu Glu Asn Leu Phe
                130               135               140

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<210> 10085
 <211> 169
 <212> PRT
 <213> B.fragilis

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<400> 10085
Ile Ser Arg Pro Ser Ser Ala Pro Ser Gly Gly Thr Ala Ser Thr Arg
1           5           10           15
Cys Asn Ser Cys Pro Pro Val Ala Ala Arg His Gly Asp Gly His Gly
                20                25                30
Ser Ser Arg Asp Ser Ser Gly Thr Pro Ser Gly Thr Leu Pro Ala Thr
                35                40                45
Val Pro Ser Thr Glu Ser Ser Arg Met Thr Ser Ser Tyr Val Arg Arg
                50                55                60
Ile Ser Ala Thr Ala Pro Ala Phe Ala Gly Gly Arg Ala Ala Gly Thr
65                70                75                80
Gly Thr Cys Arg Pro Pro Pro Glu Asn Pro Pro Ser Ser Arg Arg
                85                90                95
Thr Pro Pro Val Gly Leu Pro Lys Pro Pro Arg Lys Asp Arg Leu Cys
                100               105               110
Pro Arg Arg Thr Ser Pro Val Trp Leu Pro Cys Arg Pro Leu Arg Thr
                115               120               125
Gly Tyr Gly Ala Ala Met Pro Asp Ala Arg Asn Arg Val Pro His Ser
                130               135               140
Leu Pro Ala His Gly Gly Thr Ser Pro Gly Phe Ser Cys Pro Pro Ala
145                150                155                160
His Val Pro Ala Thr Ile Arg Thr Pro
                165

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<210> 10086
 <211> 128
 <212> PRT
 <213> B.fragilis

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<400> 10086
Ala Leu Leu Pro Leu Ala Pro Leu Ala Pro Ser Phe Pro Ser Phe Pro
1           5           10           15
Ser Leu Pro Ser Leu Pro Lys Ala Gly Leu Pro Val Ser Val Pro Phe
                20                25                30
Ile Tyr Gln Leu Pro Leu Ser Pro Met Ala Thr Ser Gly Asp Phe Pro
                35                40                45

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Ser	Cys	Pro	Thr	Ala	Phe	Phe	Pro	Val	Ser	Val	Pro	Ser	Thr	Asn	Gln
50						55				60					
Leu	Pro	Leu	Ser	Pro	Met	Val	Thr	Val	Gly	Gly	Thr	Ala	Ser	Phe	Pro
65					70				75						80
Ser	Phe	Pro	Ser	Leu	Pro	Ser	Leu	Pro	Lys	Ala	Gly	Leu	Pro	Val	Ser
				85					90					95	
Val	Pro	Leu	Ile	Tyr	Gln	Leu	Pro	Leu	Ser	Pro	Met	Val	Thr	Val	Gly
			100					105					110		
Gly	Ile	Ala	Ser	Arg	Pro	Phe	Val	Pro	Ser	Leu	Pro	Ser	Leu	Pro	Ser
		115					120					125			

<210> 10087

<211> 687

<212> PRT

<213> B.fragilis

<400> 10087

Asn	Phe	Ala	Phe	Leu	Cys	Val	Leu	Cys	Arg	Phe	Phe	Gly	Lys	Lys	Tyr
1				5					10					15	
Ser	Ala	Arg	Leu	Asn	Ser	Glu	Tyr	Asp	Leu	Leu	Asn	Gly	Arg	Leu	Lys
			20					25					30		
Val	Gly	Glu	Asn	Leu	Glu	Leu	Asn	Tyr	Met	Asn	Tyr	Arg	Glu	Ala	Asn
		35					40					45			
His	Thr	Gln	Leu	Ala	Ala	Asn	Glu	Pro	Pro	Ile	Ile	Pro	Val	Tyr	Thr
	50					55					60				
Glu	Thr	Gly	Gly	Trp	Gly	Gly	Ala	Ser	Leu	Asp	Val	Gly	Met	Asp	Asp
65					70					75					80
Tyr	Arg	Asn	Pro	Val	Lys	Asp	Leu	Ile	Leu	Gly	Lys	Asp	Asn	Val	Asn
				85					90					95	
Lys	Phe	Leu	Lys	Val	Ile	Gly	Asn	Thr	Tyr	Ala	Asp	Leu	Met	Ile	Ile
			100					105					110		
Lys	Gly	Leu	Asn	Leu	Arg	Thr	Ser	Phe	Gly	Val	Asp	Tyr	Arg	Gly	Ser
		115					120					125			
Tyr	Tyr	Arg	Ala	Val	Asp	Lys	Lys	Trp	Ser	Glu	Ala	Asp	Gly	Ser	Gly
	130					135					140				
Arg	Asp	Glu	Lys	Phe	Asn	Tyr	Val	Arg	Asn	Asp	Gln	Thr	His	Phe	Leu
145					150					155					160
Glu	Tyr	Gln	Trp	Thr	Asn	Gln	Ile	Asn	Tyr	Asn	Gly	Gln	Phe	Gly	Lys
				165					170					175	
His	Ser	Ile	Gly	Ala	Val	Val	Gly	Met	Glu	Phe	Thr	Lys	Ala	Glu	Ser
			180					185					190		
Glu	Ala	Phe	Tyr	Ala	Arg	Lys	Asp	Gly	Leu	Thr	Leu	Glu	Asp	Arg	Asp
		195					200					205			
Tyr	Ala	Phe	Leu	Ser	Ser	Ala	Thr	Gly	Asp	Lys	Ile	Thr	Glu	Ala	Thr
	210					215					220				
Gly	Ser	Gly	Asp	Ala	Tyr	Ala	Leu	Leu	Ser	Tyr	Phe	Gly	Lys	Phe	Asn
225					230					235					240
Tyr	Ser	Tyr	Ala	Ser	Lys	Tyr	Leu	Ala	Ser	Ala	Thr	Leu	Arg	Tyr	Asp
				245					250					255	
Gly	Ser	Ser	Lys	Phe	Gly	Ala	Asp	Asn	Arg	Trp	Ala	Val	Phe	Pro	Ala
			260					265					270		
Phe	Ser	Leu	Gly	Trp	Arg	Ile	Lys	Asn	Glu	Pro	Phe	Leu	Glu	Asn	Val
		275					280					285			
Asp	Phe	Leu	Ser	Asp	Leu	Lys	Leu	Arg	Phe	Ser	Trp	Gly	Arg	Asn	Gly
	290					295					300				
Asn	Ser	Ala	Ile	Pro	Ser	Gly	Tyr	Leu	Gln	Ser	Ser	Tyr	Val	Ala	Asp
305					310					315					320
Tyr	Asn	Gly	Thr	Ser	Tyr	Ala	Met	Asn	Gly	Gln	Glu	Ser	Gly	Ser	Leu
				325					330					335	

10087
 687
 PRT
 B.fragilis
 10087

Gln Ser Gly Phe Arg Lys Tyr Leu Thr Gly Asn Ser Thr Leu Lys Trp
 340 345 350
 Glu Thr Val Thr Gln Thr Asn Tyr Gly Ile Asp Phe Gly Phe Phe Asn
 355 360 365
 Gln Ser Leu Val Gly Thr Ile Asp Tyr Phe Tyr Lys Lys Thr Thr Asp
 370 375 380
 Met Leu Tyr Leu Pro Pro Tyr Ile Gly Ala Phe Gly Glu Gly Gly Asp
 385 390 395 400
 Thr Tyr Val Asn Gly Pro Ser Met Glu Asn Arg Gly Val Glu Ile Leu
 405 410 415
 Leu Thr Tyr Arg Asn Ser Leu Pro Ser Gly Phe Asn Tyr Ser Ile Thr
 420 425 430
 Gly Asn Ile Ala Thr Phe Lys Asn Lys Ile Thr Glu Leu Pro Asp Asn
 435 440 445
 Val Arg Ser Val Tyr Gly Gly Asn Gly Met Leu Asp Asp Ile Ile Gly
 450 455 460
 Arg Pro Arg Asn Ser Ile Tyr Gly Tyr Val Ala Asp Gly Ile Phe Lys
 465 470 475 480
 Thr Gln Glu Glu Val Asp Asn Ser Pro Gln Gln Ala Gly Lys Gly Leu
 485 490 495
 Gly Arg Ile Arg Tyr Lys Asp Leu Asp Gly Asp Gly Arg Ile Thr Gln
 500 505 510
 Asp Tyr Asp Arg Thr Trp Ile Gly Val Ser Asp Pro Asp Phe Thr Tyr
 515 520 525
 Gly Leu Asn Leu Gln Ala Ser Tyr Lys Asn Val Asp Leu Ala Leu Phe
 530 535 540
 Phe Gln Gly Val His Gly Gly Asp Val Trp Asp Ser Trp Ile Glu Tyr
 545 550 555 560
 Ser Asp Phe Trp Asn Ile Gln Asn Val Asn Asn Thr Asn His Leu Lys
 565 570 575
 Gly Val Phe Asn Ala Trp Ser Pro Gln Asn Pro Asp Ser Asn Ile Pro
 580 585 590
 Ala Leu Ser Thr Arg Asn Thr Asn Asp Glu Lys Arg Thr Ser Thr Tyr
 595 600 605
 Phe Leu Lys Asp Gly Ser Tyr Leu Lys Leu Arg Thr Ile Glu Leu Gly
 610 615 620
 Tyr Thr Phe Pro Glu Ser Met Val Lys Lys Ala Met Ile Ser Arg Leu
 625 630 635 640
 Arg Ala Tyr Val Ser Ala Asn Asn Val Phe Thr Ile Lys Lys Trp Trp
 645 650 655
 Asp Ser Asn Arg Phe Ser Gly Pro Asp Pro Glu Ile Arg Asp Phe Gly
 660 665 670
 Tyr Val Ile Pro Phe Thr Ala Thr Val Gly Val Asn Ile Thr Phe
 675 680 685

<210> 10088
 <211> 332
 <212> PRT
 <213> B.fragilis

<400> 10088
 Cys Phe Thr Pro Asn Asn Asn Arg Ser Thr Asp Tyr Lys Thr Ile Lys
 1 5 10 15
 Lys Lys Gly Gln Met Lys Lys Ile Phe Gly Trp Val Ala Leu Leu Met
 20 25 30
 Gly Met Val Thr Gly Ala Asn Ala Gln Val Asn Asp Thr Ile Gln Arg
 35 40 45
 Val Thr Gly Asn Asp Leu Tyr Gln Gly Ile Thr Arg Lys Leu Pro Tyr
 50 55 60

Arg Gln Met Val Thr Pro His Gly Val Gln Val Thr Phe Ala Lys Thr
 65 70 75 80
 Val His Ile Ile Phe Pro Ser Ala Val Arg Tyr Val Asp Leu Gly Ser
 85 90 95
 Asn Trp Ile Ile Ala Gly Lys Ala Asp Gly Ala Glu Asn Val Ile Arg
 100 105 110
 Val Lys Ala Thr Thr Glu Gly Phe Pro Gly Glu Thr Asn Phe Ser Val
 115 120 125
 Ile Cys Glu Asp Gly Ser Phe Tyr Ser Phe Asn Ala Arg Tyr Ala His
 130 135 140
 Glu Pro Glu Met Leu Asn Ile Glu Met Lys Asp Phe Leu Glu Asn Gly
 145 150 155 160
 Asn Thr Thr Asp Phe Ser His Thr Arg Met Asn Leu His Phe Arg Glu
 165 170 175
 Leu Ala Gly Glu Ser Pro Leu Leu Val Lys Leu Ile Met Gln Ser Ile
 180 185 190
 Tyr Lys Glu Asp Arg Arg Glu Ile Arg His Leu Gly Cys Lys Arg Phe
 195 200 205
 Gly Val Gln Phe Leu Leu Lys Ser Val His Ser His Asn Gly Leu Phe
 210 215 220
 Tyr Phe His Thr Glu Thr Arg Asn Arg Ser Asn Val Ala Phe Arg Thr
 225 230 235 240
 Asp Phe Ile Arg Phe Lys Val Val Asp Lys Lys Val Pro Lys Arg Thr
 245 250 255
 Ala Ile Gln Glu Arg Val Ile Asp Pro Val Arg Ser Tyr Asn Glu Val
 260 265 270
 Leu Val Thr Glu Gly Lys Ser Asp Val Arg Thr Val Tyr Ala Val Pro
 275 280 285
 Gln Phe Thr Ile Pro Asp Asp Lys Leu Leu Val Ile Glu Leu Phe Glu
 290 295 300
 Lys Asp Gly Gly Arg His Gln Thr Ile Arg Val Glu Asn Ala Asp Leu
 305 310 315 320
 Val Ala Ala Lys Gln Ile Asn Glu Leu Lys Ile Lys
 325 330

<210> 10089
 <211> 121
 <212> PRT
 <213> B.fragilis

<400> 10089
 His Pro Gln Pro Cys His Glu Gln Ala Asp Ile Pro Asp Gly Lys Gly
 1 5 10 15
 Gly Asp Ile Gln His Gly Val Cys Arg Lys Arg Gln Arg Lys Gly Glu
 20 25 30
 Gln Pro Pro Val Ala Glu Lys Glu Gln Gln Ala Gly His Ala Ala Lys
 35 40 45
 Asp Asp Pro Ala Pro Arg Asp Phe Leu Leu Leu His Ala Leu Cys Ala
 50 55 60
 Glu Ala Ala Lys Gly Glu Glu Gln His Gly Glu Glu Leu Arg Pro Glu
 65 70 75 80
 Asp Ile Gly Glu Gln Pro Gly Gly Thr Leu Glu Ala Glu Gln Tyr Pro
 85 90 95
 Ile Asp His Ala Asp Val Asp Ala Pro Phe Pro Asp Gly Leu Val Thr
 100 105 110
 Glu Pro Ile Asn Ile Asp Asp Tyr Lys
 115 120

<210> 10090

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

His 1	Ile	Gly	Thr	Leu 5	Phe	Ile	Leu	Arg	Leu 10	Arg	Gln	Ser	Leu	Asp 15	Gly
Lys	Leu	Gln	Ile	Pro	Ala	Gln	Leu	Phe	Arg	Gln	Cys	Glu	His	Leu	Arg
			20					25					30		
Leu	Leu	Ala	Leu	Phe	Gly	Gly	Ile	Gly	Gln	Val	Leu	Gly	Ser	Arg	Tyr
		35					40					45			
Leu	Arg	Gly	Ile	His	Arg	Arg	Leu	His	Pro	Val	Gln	Thr	Asp	Pro	His
		50				55					60				
Leu	Leu	Val	Leu	Pro	Ser	Gly	Met	Val	Gly	Glu	Val	Asp	Gly	Glu	Tyr
65					70					75					80
Leu	Arg	Leu	Leu	Leu	Val	Arg	Gln	Thr	Glu	His	Arg	Leu	Asp	Ala	Val
				85					90					95	
Glu	Leu	Val	His	Val	Leu	Leu	Leu	Val	Glu	Gln	Asp	Phe	Ala	Val	Arg
			100					105					110		
Val	Gly	Asp	Asp	Ser	Leu	Leu	His	Asp	Gly	Gly	Arg	Asp	Asp	Val	Val
		115					120					125			
His	Leu	Leu	Arg	Asp	Asp	Asn	Arg	Leu	Ala	Glu	Ile	Phe	Pro	Asp	Gly
		130				135					140				
Leu	Val	His	Val	Phe	Gln	Ile	Leu	Thr	His	Thr	Arg	Arg	Gly	Lys	Gly
145					150					155					160
Phe	Pro	Ser	Leu	Leu	Ala	Asp	Gln	His	Leu	Pro	His	Pro	Phe	Gln	Ala
				165					170					175	
Ala	Gln	Leu	Val	Asp	Glu	Gly	Phe	His	Asp	Asp	Asp	Arg	Asn	His	Gly
			180					185					190		
Glu	Gln	Leu	Gly	Ile	Ile	Phe	Tyr	Thr	Val	Asn	Phe	Lys	Tyr	Asp	Lys
		195					200					205			
Pro	Leu	Val	Gln	Gln	Val	Asp	Val	Leu	Val	Arg	Val	Gln	Gln	Glu	Val
		210				215					220				
Ile	Ala	Ser	Ala	Leu	Val	Ile	Leu	Pro	Glu	Cys	Gly	Gln	Glu	Val	Val
225					230					235					240
Asp	Val	Glu	Val	Leu	Pro	Ala	His	Leu	Asp	Val	Pro	Cys	Ser	Gln	Leu
				245					250					255	
Leu	Pro	Val	Ile	Val	Gln	His	Val	Leu	Val	Glu	Gly	Val	Glu	Arg	Gly
			260					265					270		
Asp	Asp	Val	Pro	Val	Leu	Leu	Tyr	Pro	Ala	Asp	Val	Arg	Arg	His	Arg
		275					280					285			
Thr	Ala	Gln	Leu	Ala	Ala	Leu	Arg	Leu	Arg	Asp	Phe	Leu	Val	Leu	Ala
		290				295					300				
Leu	Pro	Gln	Arg	Gln	Gln	Gln	Arg	Leu	Asp	Ala	Val	Leu	Leu	Leu	His
305					310					315					320
Ala	Glu	Leu	Val	Val	Val	Arg	Glu	Glu	Gly	Val	Glu	Ala	Asp	Gly	Leu
				325					330					335	
Leu	Leu	Arg	Val	Arg	Val	Val	Asn	Pro	Val	Leu	Ala	Leu	Gly	Leu	Ala
			340					345					350		
Val	Tyr	Gln	Leu	Ala	Gln	Pro	Leu	Val	Arg	Val	Ala	Arg</			

<210> 10091
 <211> 325
 <212> PRT
 <213> B.fragilis

<400> 10091

Val Met Ala Thr Thr Asn Ser Thr Ile Glu Lys Ile Ala Pro Met Phe
 1 5 10 15
 Thr Glu Leu Leu Ile Lys Lys Ile Glu Cys Leu Lys Thr Asp Trp Gln
 20 25 30
 Lys Pro Trp Ile Thr Ser Leu Glu Gln Gly Leu Pro Arg Asn Ile Arg
 35 40 45
 Gly Thr Leu Tyr Asn Gly Gly Asn Val Leu Met Leu Leu Phe Tyr Thr
 50 55 60
 Glu Phe Met Lys Phe Thr Leu Pro Val Phe Leu Thr Phe Asn Gln Ala
 65 70 75 80
 Lys Glu Glu Asp Leu Ser Val Ser Lys Gly Ala Arg Ser Phe Pro Val
 85 90 95
 Tyr Tyr Trp Phe Lys Phe Val Val His Lys Glu Thr Lys Lys Thr Ile
 100 105 110
 Lys Tyr Glu Tyr Arg Lys Leu Pro Ala Thr Glu Gln Glu Asn Tyr
 115 120 125
 Lys Val Ile Pro Gln Met Lys Tyr Tyr Asn Val Phe Asn Ile Asp Gln
 130 135 140
 Thr Asp Phe Ala Gly Lys Tyr Pro Glu Arg Tyr Glu Arg Met Lys Lys
 145 150 155 160
 Gly Glu Gln Pro Glu Asp Tyr Ser Asp Arg Met Ile Tyr Glu Ala Leu
 165 170 175
 Asp Glu Leu Val Tyr Leu Gln Asn Trp Tyr Cys Pro Ile Lys Val Gln
 180 185 190
 Tyr Ser Asp Ser Ala Tyr Tyr Ser Pro Ser Ser Asp His Ile Val Cys
 195 200 205
 Pro Gln Arg Glu Gln Phe Pro Gln Gly Ala Glu Phe Tyr Gly Thr Leu
 210 215 220
 Leu His Glu Met Ala His Ser Thr Gly Ser Pro Gln Arg Leu Asn Arg
 225 230 235 240
 Thr Phe Gly Cys Phe Phe Gly Asp Ala Leu Tyr Ala Arg Glu Glu Leu
 245 250 255
 Val Ala Glu Leu Thr Ala Ala Leu Cys Gly Ala Phe Phe Gly Tyr Ala
 260 265 270
 Thr Ala Pro Gln Glu Asn Asn Ala Ala Tyr Leu Lys His Trp Leu Thr
 275 280 285
 Lys Leu Arg Glu Glu Pro Ala Phe Leu Val Glu Ile Leu Gly Asp Val
 290 295 300
 Asn Lys Ala Ala Lys Met Ile Ala Asp Lys Val Thr Glu Pro Val Asn
 305 310 315 320
 Glu Pro Ala Ala Ala
 325

<210> 10092
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 10092

Pro Gly Arg Thr Leu Arg Gly Gly Gly Gly Tyr Pro Pro Gly Gly Asp
 1 5 10 15
 Glu Trp Arg Asn Gly Gly Leu Pro Ala Ala Ala Gly Arg Gln Val Tyr

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 10093

<400> 10094

Tyr	Asn	Leu	Leu	Asn	Arg	Asn	Ser	Met	Lys	Thr	Phe	Tyr	Ser	Leu	Phe
1				5					10					15	
Leu	Ser	Ser	Ala	Leu	Leu	Leu	Ser	Leu	Leu	Val	Thr	Ser	Cys	Ala	Asp
			20					25					30		

Gln Leu Asn Ile Asn Pro Lys Gly Val Leu Ala Asp Asp Leu Leu Leu
 35 40 45
 Gly Lys Pro Glu His Ile Asp Asp Phe Val Thr Pro Cys Tyr Ser Leu
 50 55 60
 Ile Pro Tyr Leu Pro Trp Ser Glu Ala His Ala Trp Trp Met His Gly
 65 70 75 80
 Ser Ile Arg Ser Asp Ala Tyr Lys Gly Gly Ser Gly Val Ser Asp
 85 90 95
 Gln Ser Ala Trp His Asp Met Glu Val Phe Ser Ser Val Thr Ala Asn
 100 105 110
 Val Gly Asn Asn Asp Gly Pro Trp Phe Lys Gly Tyr Val Ala Ile Ser
 115 120 125
 Arg Tyr Asn Leu Ala Leu Tyr Ala Leu Ser Lys Val Thr Asp Glu Asn
 130 135 140
 Tyr Pro Leu Lys Gly Val Arg Thr Gly Glu Val Lys Phe Leu Arg Gly
 145 150 155 160
 Ala Thr Tyr Phe Phe Met Lys Thr Leu Trp Arg Tyr Ile Pro Trp Val
 165 170 175
 Asp Glu Glu Asn Gly Arg Thr Val Glu Asp Val Thr Asn Ile Ser Asn
 180 185 190
 Arg Pro Asn Gly Thr Asp Asp Thr Tyr Leu Trp Glu His Ile Val Ala
 195 200 205
 Asp Leu Glu Glu Ala Val Arg Leu Leu Pro Glu Lys Gln Glu Glu Ile
 210 215 220
 Gly Arg Ile Asn Lys Asn Ala Ala Arg Ala Met Ala Ala Lys Ala Leu
 225 230 235 240
 Leu Phe Met Ala Tyr Lys Gln Asp Ala Arg His Gln Val Val Glu Val
 245 250 255
 Asp Lys Lys Ile Leu Glu Arg Ala Leu Val Tyr Ile Asn Glu Ile Thr
 260 265 270
 Asp Gln Glu Gly Gly Asn Val Gly Leu Cys Glu Asp Phe Ala Glu Asn
 275 280 285
 Phe Leu Pro Glu Tyr Asp Asn Ala Thr Lys Glu Ala Ile Trp Glu Ile
 290 295 300
 Gln Tyr Ser Ile Asn Asp Gly Thr Ser Ser Gly Gly Asn Thr Asn Asn
 305 310 315 320
 Gly Ala Glu Leu Asn Ala Pro Ser Trp Glu Pro Tyr Phe Pro Cys Cys
 325 330 335
 Asp Phe His Lys Met Ser Phe Asn Met Ala Asn Ala Phe Arg Thr Gly
 340 345 350
 Thr Asp Gly Leu Pro Leu Phe Asp Thr Phe Asn Asp Ala Glu Met Lys
 355 360 365
 Gly Arg Phe Lys Glu Tyr Phe Asp Glu Asn Ser Phe Asp Pro Arg Leu
 370 375 380
 Ser His Thr Ala Ala Ile Pro Gly Tyr Pro Tyr Lys Tyr Asn Pro Asp
 385 390 395 400
 Leu Leu Tyr Glu Glu Lys Ala Ser Arg Ser Pro Gly Asp Tyr Gly Tyr
 405 410 415
 Leu Lys Ser Val Lys Glu Leu Val Pro Ala Gly Cys Asp Cys Ile Ile
 420 425 430
 Val Asn Arg Asn Ser Met Asn Val Lys Gln Ile Arg Tyr Ala Glu Val
 435 440 445
 Leu Leu Trp Lys Ala Glu Ile Leu Ile Gln Leu Asp Arg His Lys Glu
 450 455 460
 Ala Arg Pro Ile Ile Asn Lys Leu Arg Glu Arg Ala Asn Asn Ser Arg
 465 470 475 480
 Ile Arg Leu Leu Met Ala Asp Gly Thr Pro Tyr Met Asn Tyr Lys Val
 485 490 495
 Ser Leu Tyr Thr Asp Glu Ala Ala Trp Thr Lys Asp Tyr Ala Trp Lys

500	505	510
Ala Leu Met Phe Glu Asn Arg	Leu Glu Thr Ala Cys Glu Gly Arg Arg	
515	520	525
Phe Phe Asp Leu Gln Arg Trp Gly Ile Leu Glu Pro Thr Met Asn Ala		
530	535	540
Tyr Phe Lys Lys Glu Lys Thr Arg Phe Ser Trp Met Asn Asn Ala Val		
545	550	555
Phe Val Ala Gly Arg Asp Glu Tyr Lys Pro Ile Pro Gln Gln Gln Met		
565	570	575
Asn Trp Ala Lys Gly Asn Tyr Ile Gln Asn Pro Gly Tyr		
580	585	

<210> 10095
 <211> 269
 <212> PRT
 <213> B.fragilis

<400> 10095

Leu Ile Lys Tyr Ala Leu Met Phe Leu Tyr Phe Cys Ile His Ile Gln	
1 5 10 15	
Lys Arg Asn Tyr Met Arg Leu Gly Leu Leu Thr Ala Phe Ile Leu Leu	
20 25 30	
Leu Ser Phe Thr Thr Ser Cys Gln Tyr Lys Glu Ala Gln Pro His Pro	
35 40 45	
Ala Phe Lys Asp Ser Ile Val Leu Val Thr Pro Val Glu Pro Gln Pro	
50 55 60	
Ile Ala Ser Lys Ser Gln Thr Ala Phe Tyr Leu Asp Ser Ile Gly Leu	
65 70 75 80	
Met Asn Ile Ala Glu Leu Asp Ser Thr Phe Ile Ile Arg Leu Met Tyr	
85 90 95	
Ala Thr Pro Asp Asn Phe Thr Gly Gln Leu Leu Tyr Thr Asp Leu Lys	
100 105 110	
Glu Ala Tyr Leu His Pro Asp Ala Ala Lys Ala Leu Leu Glu Ala His	
115 120 125	
Leu Leu Leu Lys Ala Gln Tyr Pro Ser Tyr Arg Leu Ile Ile Tyr Asp	
130 135 140	
Ala Ala Arg Pro Met Ser Val Gln Lys Lys Met Trp Asp Val Val Lys	
145 150 155 160	
Gly Thr Ser Lys Tyr Met Tyr Val Ser Asn Pro Ser Arg Gly Gly Gly	
165 170 175	
Leu His Asn Tyr Gly Leu Ala Val Asp Ile Ser Ile Ala Asp Ser Leu	
180 185 190	
Gly His Pro Leu Pro Met Gly Thr Glu Val Asp Tyr Met Asp Ala Ala	
195 200 205	
Ser His Ile Thr Asn Glu Ala Lys Leu Val Arg Glu Gly Lys Ile Thr	
210 215 220	
Gln Gln Glu Arg Glu Asn Arg Ile Leu Leu Arg Gln Val Met Lys Ser	
225 230 235 240	
Ala Gly Phe Arg Ala Leu Pro Ser Glu Trp Trp His Phe Asn Leu Cys	
245 250 255	
Ser Arg Asp Glu Ala Lys Gln Lys Tyr Lys Leu Ile Asn	
260 265	

<210> 10096
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 10096

Arg Ala Gly Tyr Ser Asp Glu Ile Pro Val His Gly Gly Asp Asp Ala
 1 5 10 15
 Arg Pro Glu Gly Ala Glu Ser Glu Arg Asp Gly Gly Asp Thr Val Arg
 20 25 30
 Ala Glu Thr Gly Arg Thr Leu Gly Gly Arg Pro Val His Asp Pro Leu
 35 40 45
 Val Pro Leu Arg Arg Gly Arg His Ala Gln Thr Gly
 50 55 60

<210> 10097

<211> 400

<212> PRT

<213> B.fragilis

<400> 10097

Asp Met Tyr Leu Ser Pro Glu Thr Ile Leu Phe Ile Arg Glu His Arg
 1 5 10 15
 Asn Asp Asp Val His Ser Leu Ala Leu Gln Ala Lys Arg Tyr Pro Gln
 20 25 30
 Val Asp Met Pro Leu Ala Ile Val Gln Ile Ala Gly Trp Gln Ala Thr
 35 40 45
 Val Ser Lys Ile Pro Ser Trp His Ala Thr Glu Gly Leu Leu Tyr Pro
 50 55 60
 Arg His Leu Ser Leu Glu Gln Cys Ser Ser Glu Val Thr Ala Leu Tyr
 65 70 75 80
 Lys Ala Ser Leu Val His Gly Glu Gly Leu Val Asp Leu Thr Gly Gly
 85 90 95
 Phe Gly Ile Asp Cys Ala Phe Leu Ala Thr Gln Phe Lys Thr Val Thr
 100 105 110
 Tyr Ile Glu Arg Gln Glu Glu Leu Cys Glu Leu Ala Met His Asn Phe
 115 120 125
 Pro Leu Leu Gly Leu Lys His Ile Arg Val Gln Asn Gly Asp Gly Val
 130 135 140
 Glu Tyr Leu Gln Gln Met Pro Ala Val Asp Cys Ile Phe Leu Asp Pro
 145 150 155 160
 Ala Arg Arg Asn Glu His Gly Gly Lys Thr Val Ala Ile Ser Asp Cys
 165 170 175
 Glu Pro Asn Val Ala Thr Leu Glu Lys Leu Leu Leu Glu Lys Gly Lys
 180 185 190
 Gln Val Met Ile Lys Leu Ser Pro Met Leu Asp Leu Ser Leu Ala Ile
 195 200 205
 Arg Asp Met Gln His Val Ser Glu Ala His Ile Val Ser Val Asn Asn
 210 215 220
 Glu Cys Lys Glu Leu Leu Leu Leu Arg Pro Gly Asp Asp Ser Pro
 225 230 235 240
 Glu Ile Pro Ser Ala Met Ser Gln Pro Ile Val Cys Ile Asn Phe Ala
 245 250 255
 Asn Gln Glu Ile Gln Arg Phe Val Phe Thr Arg Glu Ser Glu Gln Ala
 260 265 270
 Thr Glu Cys Ser Tyr Thr His Glu Ile Gly Thr Tyr Leu Tyr Glu Pro
 275 280 285
 Asn Ala Ser Ile Leu Lys Ala Gly Ala Phe Arg Ser Ile Ala Ser Ser
 290 295 300
 Phe His Leu Ser Lys Leu His Ala Asn Ser His Leu Tyr Thr Ser Asn
 305 310 315 320
 Glu Arg Ile Glu Lys Phe Pro Gly Arg Ile Phe Arg Ile Thr Gly Tyr
 325 330 335
 Ser Gly Leu Asn Lys Lys Glu Leu Lys Asn Ile Leu Asn Gly Leu Asp
 340 345 350

[illegible]

<400> 10098

Glu 1	Ala	Leu	Gln	Arg 5	Thr	Pro	Val	Pro	Leu 10	Ala	His	Leu	Leu	Pro 15	Val
Pro	Asp	Lys	Asp 20	His	Glu	Gly	Ala	Glu 25	Pro	Ser	Gly	Lys	His 30	Val	Leu
His	Pro	Leu 35	Gln	Gly	Gln	Ala	Cys 40	Pro	Gln	Gly	Asp 45	Arg	Gly	Pro	Gly
Asp	Gly 50	Tyr	Glu	Val	Pro	Arg 55	Ser	Arg	Arg	Ala	Val 60	Arg	Glu	Asp	His
Glu 65	Arg	Gln	Arg	Phe 70	Cys	Tyr	Ala	Ala	Pro	Pro 75	His	Asp	Gly	Arg	Asp 80
His	Trp	Asp	Gly	Ser 85	Gly	Gly	Gly	His 90	Arg	Gly	Glu	Val	Pro	Leu 95	Ala
Leu	Ala	Ala 100	Arg	His	Asp	Gly	Ala	Glu 105	Gly	His	Pro	Val	Glu	Pro	Gly
Gly	Asp	Ala 115	His	Arg	Arg	Arg	His 120	Pro	Leu	Pro	Ala	His 125	Pro	Leu	Gly
His	Gly 130	Arg	Pro	Ala	Gly	Gln 135	Gly	Gly	Asp	Gly	Gln 140	Pro	Leu	Arg	Ala
Ala 145	Leu	Asp	Arg	Pro	Leu 150	Gly	Leu	Pro	Ala	Val 155	Val	Pro	Pro	Ala	Pro 160
Val	Gly	Leu	Leu	Leu 165	Asp	Cys	Asn	His 170	Cys	Tyr	Asn	Gln	Tyr	Ile 175	Phe
Ile	Asp	Asp 180	His	Gly	Glu	Asn	Leu	Lys 185	Arg	Phe	Glu	Gln	Thr 190	Ala	Arg
Asn	Met	His 195	Ser	Leu	Ser	Arg	Tyr 200	Ser	Arg	Ser	Asn	Gln	Ile	Asn	Lys
Ala	Trp 210	Ile	Glu	Glu	Tyr	Leu 215	Asn	Glu	Ala	His	Ser 220	Lys	Gly	Leu	Thr
Ser 225	Val	Arg	Cys	His	Cys 230	Asn	Val	Met	Ala	Trp 235	Ser	Asp	Asp	Arg	Glu 240
Glu	Leu	Arg	Arg	Ile 245	Lys	Asn	Glu	Val	Gly 250	Ser	Gln	Leu	Ala	Leu	Met 255
Glu	Cys	Lys	Pro	Arg	His	Asn	Thr	Val	Asp 265	Val	Pro	Thr	Leu	Phe	Trp 270
Ala	Ala 275	Ile	Pro	Gly	Asn	Glu	Gly	Asp 280	Phe	Pro	Phe	Glu	Glu	Ser	Phe 285
Tyr	Thr 290	Phe	Ile	Pro	Gln	Ala	Leu	Cys 295	Phe	Phe	Thr	Glu	Glu	Thr	Asn
Tyr 305	Lys	Asp	Ser	Leu	Ser	Pro	Phe	Gly	Ile	Lys 315	Met	Ala	Asp	Arg	Met 320
Thr	Gly	Arg	Pro	Leu 325	His	Leu	Asp	Ile	Ser 330	Asp	Leu	Pro	Met	Lys	Lys 335
Gly	Val	Ile	Ser	Asn	Arg	Asn	Lys	Phe 345	Val	Leu	Gly	Pro	Ser	Gly	Ser 350
Gly	Lys	Ser 355	Phe	Phe	Met	Asn	His 360	Leu	Val	Arg	Gln	Tyr	Tyr	Glu	Gln

Asn Ser His Ile Val Leu Ile Asp Thr Gly Asn Ser Tyr Gln Gly Leu
 370 375 380
 Cys Glu Leu Ile His Arg Lys Thr Lys Gly Glu Asp Gly Ile Tyr Tyr
 385 390 395 400
 Thr Tyr Thr Glu Glu Lys Pro Ile Ser Phe Asn Pro Phe Phe Thr Asp
 405 410 415
 Asp Tyr Lys Phe Ser Val Glu Lys Lys Asp Ser Ile Lys Thr Leu Leu
 420 425 430
 Leu Ala Leu Trp Lys Gly Glu Asp Glu Lys Ile Thr Lys Thr Glu Ser
 435 440 445
 Gly Glu Leu Gly Ser Ala Val Ser Ala Tyr Ile Arg Arg Ile Gln Gln
 450 455 460
 Asn Arg Asp Ile Val Pro Ser Phe Asp Thr Phe Tyr Glu Tyr Met Leu
 465 470 475 480
 Asn Asp Tyr Arg Lys Glu Leu Ala Ala Arg Asp Ile Lys Val Ser Arg
 485 490 495
 Lys Asp Phe Asn Ile Asp Asn Phe Leu Thr Thr Leu Arg Gln Tyr Tyr
 500 505 510
 Lys Gly Gly Arg Tyr Asp Phe Leu Leu Asn Ser Asn Glu Asn Ile Asp
 515 520 525
 Leu Leu His Lys Arg Phe Ile Val Phe Glu Ile Asp Ser Ile Lys Asp
 530 535 540
 Asn Ala Glu Leu Phe Pro Val Val Thr Ile Ile Met Glu Ala Phe
 545 550 555 560
 Ile Asn Lys Leu Arg Arg Leu Lys Gly Val Arg Lys Met Leu Ile Cys
 565 570 575
 Glu Glu Ala Trp Lys Ala Leu Ser Ser Pro Ser Met Ser Glu Tyr Leu
 580 585 590
 Lys Tyr Met Tyr Lys Thr Val Arg Lys Tyr Phe Gly Glu Ala Ile Val
 595 600 605
 Val Thr Gln Glu Val Asp Asp Ile Ile Ser Ser Pro Ile Val Lys Glu
 610 615 620
 Ala Ile Ile Thr Asn Ser Asp Cys Lys Ile Leu Leu Asp Gln Lys Lys
 625 630 635 640
 Tyr Met Asn Lys Phe Asp Gly Ile Gln Ser Met Leu Gly Leu Thr Asp
 645 650 655
 Lys Glu Lys Ser Gln Ile Leu Ser Ile Asn Leu Ala Asn His Pro Gly
 660 665 670
 Arg Lys Tyr Lys Glu Val Trp Ile Gly Leu Asn Gly Val Gln Ser Ala
 675 680 685
 Val Tyr Ala Thr Glu Val Ser Ala Ala Glu Tyr Leu Thr Tyr Thr Thr
 690 695 700
 Glu Glu Ser Glu Lys Thr Glu Val Phe Ala Leu Pro Lys Lys Leu Gly
 705 710 715 720
 Gly Asp Leu Glu Leu Ala Ile Lys Arg Leu Ala Glu Thr Lys Tyr Lys
 725 730 735

<210> 10099

<211> 776

<212> PRT

<213> B.fragilis

<400> 10099

Phe Ile Pro His Phe Ile Tyr Leu Lys Leu Asn Asn Tyr Met Asn Leu
 1 5 10 15
 Phe Lys Ser Ser Val Leu Cys Gly Met Val Ile Val Ser Phe Met Thr
 20 25 30
 Ser Cys Thr Asp Val Asp Ile Thr Met Pro Lys Gly Pro Lys Gly Asp
 35 40 45

Thr	Gly	Leu	Ser	Ala	Tyr	Glu	Phe	Trp	Lys	Glu	Lys	Val	Ala	Asp	Gly
50						55				60					
Thr	Val	Asn	Trp	Pro	Lys	Asp	Gln	Thr	Glu	Val	Ala	Asp	Phe	Phe	Lys
65					70					75					80
Phe	Leu	Lys	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Gln	Ser	Ala
				85					90					95	
Phe	Glu	Gln	Trp	Lys	Asp	Met	Ile	Ala	Ser	Gly	Ser	Val	Asp	Asp	Pro
			100					105					110		
His	Asn	Pro	Gly	Glu	Lys	Trp	Pro	Ser	Glu	Asn	Asn	Thr	Val	Gln	Asp
		115					120					125			
Phe	Trp	Arg	Phe	Leu	Thr	Gly	Ala	Ser	Gly	Glu	Asp	Gly	Gln	Thr	Pro
	130					135					140				
His	Ile	Gly	Asp	Asn	Gly	Asn	Trp	Phe	Ile	Gly	Lys	Glu	Asp	Thr	Gly
145					150					155					160
Ile	Gly	Ala	Arg	Gly	Arg	Asp	Gly	Gln	Asp	Gly	Lys	Asp	Gly	Lys	Asp
				165					170					175	
Gly	Thr	Asn	Gly	Arg	Asp	Ala	Ile	Pro	Pro	Thr	Val	Thr	Ile	Gly	Asp
			180					185					190		
Asn	Gly	Asn	Trp	Tyr	Ile	Asn	Gly	Thr	Asp	Thr	Gly	Lys	Pro	Ala	Phe
		195					200					205			
Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Ala	Val	Pro	Pro
	210					215					220				
Thr	Val	Thr	Ile	Gly	Asp	Asn	Gly	Asn	Trp	Phe	Val	Asp	Gly	Thr	Asp
225					230					235					240
Thr	Gly	Lys	Lys	Ala	Val	Gly	Gln	Asp	Gly	Lys	Ser	Pro	Glu	Val	Ala
				245					250					255	
Ile	Gly	Asp	Asn	Gly	Asn	Trp	Tyr	Ile	Asn	Gly	Thr	Asp	Thr	Gly	Lys
			260					265					270		
Pro	Ala	Phe	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Gly
		275					280					285			
Ala	Asn	Gly	Ala	Asn	Gly	Lys	Ser	Ala	Tyr	Glu	Leu	Trp	Lys	Glu	Tyr
	290					295					300				
Ile	Ser	Ser	Gly	Asp	Val	Asp	Asn	Pro	His	Asn	Pro	Asp	Gln	Lys	Trp
305					310					315					320
Pro	Ala	Asp	Arg	Asn	Lys	Gln	Thr	Asp	Phe	Trp	Asp	Phe	Leu	Thr	Gly
				325					330					335	
Lys	Ser	Ser	Val	Ile	Glu	Ile	Glu	Val	Gly	Lys	Tyr	Asn	Val	Ile	Pro
			340					345					350		
Glu	Tyr	Trp	Asn	Ser	Ser	Leu	Lys	Glu	Tyr	Val	Val	Pro	Ser	Asp	Gly
		355					360					365			
Ser	Val	Leu	Phe	Thr	Val	Tyr	Asp	Lys	Thr	Gly	Lys	Lys	Val	Thr	Ala
		370				375					380				
Gly	Val	Lys	Val	Ser	Asp	Leu	Pro	Gly	Val	Ser	Ser	Thr	Asp	Ala	Phe
385					390					395					400
Ile	Thr	Asn	Glu	Glu	Gly	Gln	Phe	Lys	Val	Thr	Trp	Asp	Lys	Leu	Pro
				405					410					415	
Asp	Asn	Lys	Gly	Leu	Ser	Glu	Arg	Lys	Gly	Ser	Val	Thr	Val	Thr	Val
			420					425					430		
Asp	Gly	Thr	Gln	Glu	Thr	Ser	Ala	Gly	Asn	Thr	Leu	Val	Pro	Asn	Arg
		435					440					445			
Ile	Asn	Val	Arg	Ala	Ile	Ile	Thr	Ser	Ala	Tyr	Leu	Ser	Asn	Tyr	Ser
	450					455					460				
Asn	Thr	Ser	Ile	Asp	Ile	Tyr	Arg	Thr	Leu	Asn	Val	Tyr	Tyr	Ser	Phe
465					470					475					480
Glu	Arg	Gln	Val	Asp	Gly	Glu	Trp	Asp	Lys	Tyr	Pro	Thr	Ser	Ile	Thr
				485					490					495	
Thr	Pro	Tyr	Asn	Ser	Met	Lys	Ser	Ala	Arg	Val	Lys	Asp	Ile	Asn	Arg
			500					505					510		
Pro	Val	Asn	Glu	Gly	Asn	Val	Asp	Lys	Asp	Gln	Leu	Val	Arg	Tyr	Ser

515	520	525
Asn Gly Asn Ser Tyr Leu	Tyr Ile Ile Arg Pro Leu	Val Leu Thr Glu
530	535	540
Thr Glu Lys Ala Asn Val	Ala Lys Asn Asp Thr	Val Gly Lys Leu Ala
545	550	555
Lys Tyr Glu Trp Asp Gln	Thr Asp Asn Tyr Ala	Ala Leu Tyr Phe Gly
565	570	575
Asp Gly Thr Gly Ser Tyr	Asn Asp Tyr Gly Gln	Thr Val Tyr Leu Gln
580	585	590
Asp Lys Ile His Val Pro	Glu Val Tyr Pro Ala	Pro Ser Phe Lys Glu
595	600	605
Asn Ser Val Phe Ile Glu	Ile Lys Gln Gly Ile	Thr Thr Met Trp Gly
610	615	620
Glu Ile Asp Thr Asp Asn	Leu Gln Asn Phe Tyr	Lys Thr Tyr Ala Tyr
625	630	635
Pro Thr Gly Gln Asp Lys	Phe Thr Lys Glu Glu	Gly Thr Asn Val Trp
645	650	655
Lys His Pro Glu Gly Lys	Leu Pro Ala Ser Glu	Leu Glu Glu Asn Arg
660	665	670
Ala Val Phe Ile Glu Met	Arg Thr Phe Ile Asn	Gly Thr Gly Gly Thr
675	680	685
Val His Thr Gly Ser Lys	Pro Leu Ser Thr Gly	Gly Lys Arg Phe Lys
690	695	700
Leu Thr Ser Thr Tyr Pro	Asn Asn Trp Ile Gly	Leu Asp Ile Arg Arg
705	710	715
Arg Thr Glu Ser Thr Asp	Lys Ile Thr Tyr Asn	Ile Ser Asn Glu Tyr
725	730	735
Arg Gly Arg Tyr Ala Tyr	Tyr Leu Leu Lys Glu	Glu Asp Lys Tyr Tyr
740	745	750
Leu Val Asp Phe Ala Asp	Trp Ser Lys Arg Met	Pro Leu Pro Ile Lys
755	760	765
Asp Cys Pro Val Asp Trp	Met Asn	
770	775	

<210> 10100
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 10100
 Arg Tyr Gly Gln Thr Asp Ile Glu Arg Gly Phe Arg His Thr Glu Arg
 1 5 10 15
 Arg Gln Arg Gln Asp Gly Tyr His Gly Val Gly Gly Gly Leu Pro Ala
 20 25 30
 Leu Pro Leu Gly Val Ser Ala Gly Gly Asp Arg Leu Arg Leu Pro Ala
 35 40 45
 Val Gln Pro Val Arg Asp Ala Gly Thr Gly Gln Pro Gly Gly Thr Gly
 50 55 60
 Glu Arg Ile Pro Glu Thr Gly Gly Leu Arg Thr Asp Ala Ala Ala Gly
 65 70 75 80
 Ala Cys Arg Leu Ser Gly Ala Gln Val Pro Gly Gly Ala Ser Pro Arg
 85 90 95
 His Gly Lys Gly Ala Gly Gly Gly Arg Leu Leu Arg Pro Ala Leu Leu
 100 105 110
 Arg Pro Ala Gly His Gly Glu Leu Gly Gly His Pro Ala His Asp Arg
 115 120 125
 Thr Asp Gly Leu His Leu Arg Pro Gly Glu Cys Gly Gln Gly Gly Ile
 130 135 140
 Gly Glu His Ala Leu Leu Pro Arg Arg Ala Ala Thr Asp Asp Ala Gly

145 150 155 160
 Gln Arg Asp Glu Pro Pro Glu Gly Ala Leu Pro Phe Leu Glu Pro Ser
 165 170 175
 Arg

<210> 10101
 <211> 882
 <212> PRT
 <213> B.fragilis

<400> 10101
 Pro Ile Arg Glu Leu Thr Gly Arg Ala Thr Arg Ser Ala Ser Pro Ser
 1 5 10 15
 Ser Pro Pro Cys Ser Ala Arg Arg Arg Ala Ser Leu Pro Ser Lys Gly
 20 25 30
 Gly Cys Thr Thr Leu Pro His Gly Lys Arg Pro Thr Arg Arg Ser Pro
 35 40 45
 Pro Pro Pro Pro Glu Arg Leu Gln Pro Pro Cys Arg Pro Gln Gly Met
 50 55 60
 Thr Gly Arg Ser Ser Ser Gly Asn Ser Cys Gly Arg Glu Ser Ala Trp
 65 70 75 80
 Tyr Ser Val Arg Met Lys Pro Gly Ala Ser Met Gly Arg Pro Ser Ser
 85 90 95
 Thr Met Pro Pro Lys Pro Ser Ser Thr Ala Pro Val Trp Ala Arg Ser
 100 105 110
 Phe Pro Gln Ala Cys Ser Thr Thr Phe Ser Pro Gly Arg Lys Ala Phe
 115 120 125
 Thr Cys Arg Asn Pro Pro Pro Glu Trp Asn Ile Pro Pro Gly Ser Arg
 130 135 140
 Ser Ile Arg Ala His Pro Asn Gly Thr Asp Ile Pro Ala Ile Val Leu
 145 150 155 160
 Thr Thr Arg Thr Ala Leu Pro Lys Thr Trp Arg Pro Pro Ser Thr Ser
 165 170 175
 Leu Pro Ser Tyr Pro Ala Glu Arg Pro Val Thr Ser Pro Tyr Arg Arg
 180 185 190
 Ser Ala Lys Arg Lys Arg Gly Ala Ser Thr Ala Gly Asn Asn Asn Gln
 195 200 205
 Leu Lys Ile Gln Arg Ile Met Gln Asn Glu Asp Asp Leu Arg Gly Leu
 210 215 220
 Ala Lys Val Met Glu Phe Met Arg Ala Ile Ser Ile Leu Phe Val Val
 225 230 235 240
 Ile Asn Ile Tyr Trp Phe Cys Tyr Gln Ser Val Arg Glu Trp Gly Ile
 245 250 255
 Asp Ile Gly Val Val Asp Arg Ile Leu Leu Gly Phe Gln Arg Thr Ala
 260 265 270
 Gly Leu Phe Ser Asn Ile Leu Trp Thr Lys Leu Phe Ala Val Leu Phe
 275 280 285
 Leu Ala Leu Ser Cys Leu Gly Thr Lys Gly Val Lys Glu Gln Lys Ile
 290 295 300
 Thr Trp Arg Arg Ile Ile Leu Cys Gly Val Ser Gly Leu Leu Leu Phe
 305 310 315 320
 Phe Gly Asn Trp Trp Leu Leu Ala Leu Pro Leu Ser Leu Pro Ala Asp
 325 330 335
 Thr Val Leu Tyr Ile Ala Thr Leu Thr Val Gly Tyr Ile Cys Leu Leu
 340 345 350
 Met Ala Gly Leu Trp Met Ser Arg Leu Leu Lys Thr Asp Leu Leu Glu
 355 360 365
 Asp Val Phe Asn Val Glu Asn Glu Ser Phe Met Gln Glu Thr Lys Leu

10101
 882
 PRT
 B.fragilis

370		375		380
Lys Glu Asn Glu Tyr Ser	Val Asn Leu Arg Thr	Arg Phe Arg Phe Arg		
385	390	395	400	
Gly Arg Ala Tyr Asp	Gly Trp Ile Asn Leu Val	Asn Pro Phe Arg Ala		
405	410	415		
Thr Met Val Leu Gly Thr	Pro Gly Ser Gly Lys Ser	Tyr Ala Ile Ile		
420	425	430		
Asn Gln Tyr Ile Lys Gln Ile	Ile Glu Lys Gly Tyr Ser	Leu Phe Leu		
435	440	445		
Tyr Asp Phe Lys Tyr Pro	Asp Leu Ala Glu Ile Ala	Tyr Asn His Leu		
450	455	460		
Leu Ala His Leu Asp Gly	Tyr Lys Val Lys Pro	Lys Phe Tyr Val Ile		
465	470	475	480	
Asn Phe Asp Asn Pro Arg	Glu Ser His Arg Cys	Asn Pro Ile His Pro		
485	490	495		
Asp Phe Met Thr Asp	Ile Ser Asp Ala Tyr	Glu Ser Ala Tyr Thr Ile		
500	505	510		
Met Leu Asn Leu Asn Arg	Thr Trp Ile Ser Lys	Gln Gly Asp Phe Phe		
515	520	525		
Val Glu Ser Pro Ile Ile	Leu Leu Ala Ser Ile	Ile Trp Tyr Leu Lys		
530	535	540		
Ile Tyr Lys Asn Gly Lys	Tyr Cys Thr Phe Pro	His Ala Ile Glu Phe		
545	550	555	560	
Leu Asn Arg Lys Tyr Ala	Asp Ile Phe Pro Ile	Leu Thr Ser Tyr Pro		
565	570	575		
Glu Leu Glu Asn Tyr Leu	Ser Pro Phe Met Asp	Ala Trp Glu Ser Ser		
580	585	590		
Ala Val Glu Gln Leu Gln	Gly Gln Ile Ala Ser	Ala Lys Ile Pro Leu		
595	600	605		
Ser Arg Met Ile Ser Pro	Ala Leu Tyr Trp Val	Met Thr Ala Asp Asp		
610	615	620		
Phe Thr Leu Asp Ile Asn	Asn Pro Glu Glu Pro	Lys Val Leu Val Val		
625	630	635	640	
Gly Asn Asn Pro Asp Arg	Gln Gly Ile Tyr Gly	Ala Ala Leu Gly Leu		
645	650	655		
Tyr Asn Ser Arg Ile Val	Lys Leu Ile Asn Lys	Lys Lys Arg Leu Lys		
660	665	670		
Ser Ser Val Ile Ile Asp	Glu Leu Pro Thr Ile	Tyr Ile Arg Gly Leu		
675	680	685		
Asp Asn Leu Ile Ala Thr	Ala Arg Ser Asn Lys	Val Ala Val Met Leu		
690	695	700		
Gly Phe Gln Asp Phe Ser	Gln Leu Lys Arg Asp	Tyr Gly Asp Lys Glu		
705	710	715	720	
Ser Ala Val Ile Cys Asn	Thr Val Gly Asn Val	Phe Ala Gly Gln Val		
725	730	735		
Val Ala Glu Thr Ala Lys	Thr Leu Ser Glu Arg	Phe Gly Lys Val Leu		
740	745	750		
Gln Lys Arg Gln Asn Met	Thr Ile Asn Arg Asn	Glu Thr Ser Val Ser		
755	760	765		
Ile Asn Thr Gln Met Asp	Ser Leu Ile Pro Ala	Ser Lys Ile Ser Asn		
770	775	780		
Leu Thr Gln Gly Met Phe	Val Gly Ala Val Ala	Asp Asn Phe Asp Glu		
785	790	795	800	
Arg Ile Glu Gln Lys Ile	Phe His Ala Glu Ile	Val Val Asp Asn Glu		
805	810	815		
Lys Val Arg Arg Glu Thr	Ala Arg Tyr Val Lys	Ile Pro Gln Ile Ile		
820	825	830		
Asp Phe Thr Asp Lys Asp	Gly Asn Asp Thr Met	Gln Gln Gln Ile Asp		
835	840	845		

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Ala Asn Tyr Tyr Arg Ile Lys Ser Glu Val Lys Gln Ile Val Ala Asp
 850 855 860
 Glu Ile Glu Arg Ile Lys Ala Asp Pro Lys Leu Ser His Leu Ile Lys
 865 870 875 880
 Asn Gly

<210> 10102
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 10102
 Gln Cys Val Lys Ser Ser Asn Arg Lys Arg Gly Asn Lys Arg Arg Lys
 1 5 10 15
 Arg Val Glu Asp Glu Asp Asp Arg Glu Thr Arg Glu Tyr Phe Leu Gly
 20 25 30
 Lys Gly Ile Ser Ala Gly Pro Lys Gly Ile Val Ala Ile Lys Ala Ser
 35 40 45
 Met Gly Ala Gly Asn Phe Lys Lys Gln Gly Trp Glu Trp Lys Gln Glu
 50 55 60
 Glu Phe Thr Val Lys Asp Gln Arg Thr Leu Leu Lys Asn
 65 70 75

<210> 10103
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 10103
 Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
 1 5 10 15
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
 20 25 30
 Leu Val Gly Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
 35 40 45
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Pro
 50 55 60
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
 65 70 75 80
 Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
 85 90 95
 Lys Leu Ser Ser
 100

<210> 10104
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 10104
 Lys Asn Ile Asn Met Glu Thr Arg Thr Leu Ala Glu Asn Gly Thr Pro
 1 5 10 15
 Val Thr Lys Glu Lys Thr Val Ala Phe Ser Gly His Arg Thr Asn Arg
 20 25 30
 Ile Ala Lys Phe Thr Ala Asp Arg Glu Lys Leu Phe Arg Glu Val Ala
 35 40 45
 Phe Asp Thr Phe Val Ala Ile Glu Ser Tyr Cys Ile Lys Lys Gly Tyr
 50 55 60

His Thr Phe Leu Ser Gly Met Cys Glu Gly Phe Asp Leu Ile Ala Ala
 65 70 75 80
 Glu Glu Val Leu Asn Leu Lys Lys Glu Tyr Pro His Ile His Leu Lys
 85 90 95
 Cys Val Leu Pro Phe Lys Gly Gln Ala Glu Arg Tyr Thr Gln Ala Asp
 100 105 110
 Lys Arg Arg Tyr Asp Thr Ile Leu Ala Gln Ala Asp Glu Val Val Thr
 115 120 125
 Leu Gln Asp Gly Tyr Thr Glu Gly Cys Phe Leu Arg Arg Asn Asp Tyr
 130 135 140
 Leu Leu Glu Asn Ser Ala Phe Leu Met Val Tyr Tyr Asp Ser Val Ala
 145 150 155 160
 Val Gly Gly Thr Phe Tyr Ile Leu Lys Arg Ala Val Glu Gln Lys Lys
 165 170 175
 Lys Phe Ala Asn Val Cys Tyr Asn Arg Arg
 180 185

<210> 10105

<211> 131

<212> PRT

<213> B.fragilis

<400> 10105

Asn Phe Val Lys Leu Lys Lys Asn Gly Ile Lys Met Arg Arg Leu Asn
 1 5 10 15
 Leu Ile Leu Leu Leu Ser Ala Val Thr Val Ala Leu Ala Phe Val Ile
 20 25 30
 Ser Cys Lys Glu Thr Asn Ala Glu Arg Leu Glu Lys Met Cys Gly Glu
 35 40 45
 Trp Val Ser Thr Gly Gly Lys Pro Pro Phe Thr Leu Trp Glu Glu Asp
 50 55 60
 Gly Lys Tyr Arg Val Thr Val Met His Arg Asn His Lys Gly Asp Ser
 65 70 75 80
 Glu Ala Glu Thr Tyr Leu Val Arg Glu Thr Glu Gly Val Leu Phe Ile
 85 90 95
 Glu Thr Gly Phe Ala Val Met Met Asp Tyr Asp Arg Glu Lys Asp His
 100 105 110
 Ile Arg Leu Ser Pro Gly Gly Glu Tyr Arg Arg Lys Ser Asp Gly Thr
 115 120 125
 Leu Lys Gln
 130

<210> 10106

<211> 154

<212> PRT

<213> B.fragilis

<400> 10106

Thr Gly Arg Lys Glu Ile Ile Tyr Arg Ile Arg Val Thr Asn Lys Lys
 1 5 10 15
 Gln Thr Ile Met Lys Arg Ile Leu Tyr Phe Phe Ser Val Met Leu Cys
 20 25 30
 Ile Leu Ala Val Thr Gly Cys Gln Asp Arg Asp Ile Ile Asp Phe Lys
 35 40 45
 Asp Gly Val Ser Leu Pro Pro Val Thr Asp Leu Lys Ser Ser Leu Thr
 50 55 60
 Pro Asp Asn Asp Ala Val Leu Glu Trp Lys Leu Pro Ser Ala Ile Pro
 65 70 75 80
 Glu Glu Ile Gln Arg Pro Leu Ser Val Tyr Val Gln Val Tyr Lys Gly

				85					90					95					
Ala	Val	Leu	Glu	His	Gln	Ile	Ser	Leu	Glu	Gly	Glu	Pro	Thr	Ser	Trp				
			100					105					110						
Glu	Tyr	Thr	Leu	Lys	Glu	Pro	Glu	Ser	Lys	Tyr	Arg	Ile	Val	Val	Lys				
		115					120					125							
Val	Gln	Gly	Met	Leu	Lys	Glu	Lys	Pro	Tyr	Gly	Gln	Ser	Asp	Glu	Ile				
	130					135					140								
Tyr	Ser	Leu	Gly	Gln	Thr	Val	Ser	Ile	Asn										
145					150														

<210> 10107

<211> 286

<212> PRT

<213> B.fragilis

<400> 10107

Lys	Asn	Arg	Asn	Met	Glu	Gln	Glu	Glu	Arg	Met	Tyr	Gln	Val	Pro	Leu				
1				5					10					15					
Glu	Met	Ile	Cys	Arg	His	Asp	Arg	Thr	Ala	Glu	Val	Cys	Arg	Ala	Ala				
			20					25					30						
Val	Glu	Glu	Asp	Gly	Trp	Gln	Leu	Glu	Asn	Val	Pro	Glu	Glu	Met	Lys				
	35					40						45							
Thr	Pro	Glu	Leu	Cys	Arg	Lys	Ala	Leu	Glu	Thr	Glu	Ala	Gly	Phe	Gly				
	50					55					60								
Asn	Asp	Phe	His	Arg	Gly	Leu	Val	Gln	His	Ile	Pro	Phe	Ala	Glu	Val				
65				70					75					80					
Cys	Met	Glu	Val	Leu	Lys	Glu	Cys	Arg	Glu	Asn	Asn	Pro	Glu	Glu	Leu				
				85					90					95					
Tyr	Gly	Val	Ala	Val	Ala	Ile	Arg	Pro	Glu	Val	Met	Asn	Gly	Glu	Met				
			100					105					110						
Ala	Asp	Phe	Leu	Leu	Pro	Leu	Asp	Gly	Arg	Cys	Ile	Ser	Ile	Leu	Pro				
		115					120					125							
Val	His	Leu	Gln	Thr	Pro	Glu	Arg	Val	Arg	Val	Ala	Val	Glu	Thr	Ser				
	130					135					140								
Gly	Met	Ser	Ala	Val	Gly	Arg	Gly	Gly	Val	Pro	Lys	Ser	Leu	Leu	Thr				
145					150					155				160					
Pro	Asp	Val	Tyr	Val	Arg	Cys	Ala	Ala	His	Ser	Arg	Glu	Ser	Leu	Met				
				165					170					175					
Met	Ile	Pro	Trp	Ala	Glu	Arg	Ser	Pro	Glu	Val	Cys	Leu	Met	Ala	Lys				
			180					185					190						
Thr	Leu	Tyr	Pro	Asp	Ile	Val	Lys	Asn	His	Pro	Glu	Phe	Val	Pro	Glu				
	195						200					205							
Ser	Val	His	Asn	Gln	Asp	Ser	Ile	Tyr	Thr	Leu	Asn	Ser	Leu	Met	Glu				
	210					215					220								
Ser	Leu	Thr	Gly	Glu	Lys	Phe	Ser	Tyr	Arg	Gln	Met	Thr	Asp	Phe	Tyr				
225					230					235				240					
Asn	Gly	Lys	Pro	Leu	Asn	Val	Lys	Arg	Met	Glu	Thr	Pro	Gly	Gly	Val				
				245					250					255					
Gln	Lys	Asp	Lys	Ser	Val	Lys	Phe	Asp	Lys	Glu	Thr	Gly	Gly	Phe	Ser				
		260					265						270						
Phe	Ser	Asp	Ile	Arg	Gln	Glu	Arg	Lys	Arg	Gly	Leu	Lys	Met						
	275						280						285						

<210> 10108

<211> 211

<212> PRT

<213> B.fragilis

<400> 10108

Lys Thr Gly Asn Met Glu Phe Lys Ser Leu Lys Asn Ile Glu Thr Ser
 1 5 10 15
 Phe Arg Gln Ile Arg Leu Phe Thr Leu Val Phe Ala Cys Leu Cys Ala
 20 25 30
 Val Val Thr Gly Phe Ala Leu Trp Lys Ser Tyr Ser Phe Ala Glu Ala
 35 40 45
 Gln Arg Gln Lys Ile Tyr Val Leu Asp Asn Gly Lys Ser Leu Met Leu
 50 55 60
 Ala Leu Ser Gln Asp Val Arg Gln Asn Arg Pro Val Glu Ala Arg Glu
 65 70 75 80
 His Val Arg Arg Phe His Glu Leu Phe Phe Thr Leu Ser Pro Asp Lys
 85 90 95
 Ser Ala Ile Glu Gly Asn Ile Lys Arg Ser Leu Leu Leu Ala Asp Lys
 100 105 110
 Ser Ala Phe Asn Tyr Tyr Lys Asp Leu Ser Glu Lys Gly Tyr Tyr Asn
 115 120 125
 Arg Ile Ile Ser Gly Asn Ile Asn Gln Met Ile Glu Ile Asp Ser Leu
 130 135 140
 Arg Cys Asp Phe Asp Lys Tyr Pro Tyr Ser Val Arg Thr Phe Ala Arg
 145 150 155 160
 Gln Ile Ile Leu Arg Glu Ser Ser Val Thr Glu Arg Ser Leu Val Thr
 165 170 175
 Arg Cys Arg Leu Leu Asp Ala Val Arg Ser Asp Asn Asn Pro Gln Gly
 180 185 190
 Phe Ile Ile Glu Gly Phe Glu Ile Thr Glu Asn Lys Asp Leu Gln Thr
 195 200 205
 Leu Lys Arg
 210

<210> 10109

<211> 192

<212> PRT

<213> B.fragilis

<400> 10109

Leu Asn Met Lys Lys Lys Ile Thr Ile Cys Phe Val Cys Leu Ser Leu
 1 5 10 15
 Leu Leu Val Ser Leu Ala Val Arg Gly Gln Asp Thr Lys Thr Thr Arg
 20 25 30
 Arg Val Pro Leu Gln Ala Glu Val Thr His Asp Gly Leu Ser Glu Lys
 35 40 45
 Glu Ser Lys Ala Trp Glu Ile Gly Leu Gly Gly Ser Leu Ile Asn Trp
 50 55 60
 Ser Arg Val Ser Val Thr Gly Phe Arg Ser Thr Pro Asp Asn Tyr Phe
 65 70 75 80
 Tyr Asn Leu Lys Ala Asn His Leu Met Gly Gly Ala Asn Leu Tyr Ile
 85 90 95
 Ala Arg Glu Leu Asn Arg Trp Phe Tyr Leu Asp Leu Gln Gly Ser Val
 100 105 110
 Gly Leu Thr Lys Asn Asn Asn Arg Thr Ala Gly Asp Asp Arg Lys Arg
 115 120 125
 Asp Leu Leu Tyr Met Gly Gly Leu Gly Leu Gln Phe Arg Phe Thr Pro
 130 135 140
 Leu Leu Arg Ser Gln Trp Val Glu Pro Tyr Leu Arg Val Gly Val Asn
 145 150 155 160
 Tyr Leu His Lys Asp Phe Ala Ser Val Tyr Gly Gly Asn Phe Glu Asp
 165 170 175
 Asp Pro Thr Gly Ser Ser Pro Arg Gly Trp Lys Asp Arg Arg Gly Ser
 180 185 190

<210> 10110
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 10110

Gln	Leu	Ser	Asn	His	Glu	Ala	Asp	Ser	His	Ala	Asp	Leu	Arg	Val	Glu
1			5					10					15		
Phe	Pro	Ala	Val	Ala	Ala	Glu	Gln	His	Pro	Leu	Ala	Thr	Val	Tyr	Gln
		20						25				30			
Gln	Asp	Asn	Leu	Val	Arg	His	Val	Gly	Gly	Gln	Leu	Gln	Arg	Glu	Arg
		35					40					45			
Thr	Pro	Val	Asp	Glu	Ile	Val	Leu	Ile	Arg	Glu	Pro	Gly	Ala	Val	Arg
	50					55					60				
Gln	Gln	Ala	Leu	Ala	Pro	Val	His	Arg	Leu	Val	Pro	Gly	Lys	Gly	Gly
65					70					75					80
Gln	Ser	Gln	Cys	Gly	Glu	Glu	Arg	Leu	Leu	Pro	Val	Gly	Lys	Glu	Val
			85						90					95	
Gln	Val	Ile	Ala	Ala	Leu	Ala	Arg	Glu	Leu	Ala	Arg	Arg	Ile	Glu	Ala
			100					105					110		
Val	Pro	Val	Ala	Val	Pro	Leu	Leu	Gln	Val	Phe	His	Thr	Asp	His	Pro
		115					120					125			
Met	Val	Gly	Val	Leu	Arg	Val	Gly	Ala	His	Arg	Tyr	Pro	Gly	Val	Val
	130					135					140				
Ala	Glu	Ala	Val	Ala	Val	Phe	Pro	Ala	His	Val	Val	Arg	Gln	Pro	Ala
145					150					155					160
Arg	Glu	Leu	Tyr	Ala	Pro	His	Ser	Gly	Gln	Ala	Pro	Leu	Gly	Val	Cys
				165					170					175	
Pro	Val	His	Met	Gln	Ala	His	Pro	Glu	Lys	Gln	Asp	Asn	Glu	Gln	
			180					185					190		

<210> 10111
 <211> 233
 <212> PRT
 <213> B.fragilis

<400> 10111

Ser	Lys	Asn	Glu	Lys	Glu	Arg	Gln	Pro	Pro	Glu	Gly	Val	Pro	Arg	His
1				5					10					15	
Ser	Ala	Ala	Gly	Lys	Gly	Ile	Leu	Asn	Leu	Ser	Gly	Arg	Thr	Asp	Phe
		20						25				30			
Ile	Phe	Lys	Arg	Lys	Trp	Gln	Val	Val	Cys	Cys	Gly	Thr	Arg	Asn	Glu
		35				40						45			
Phe	Arg	Ala	Ser	Pro	Pro	Pro	Cys	Pro	Leu	Asp	Val	Ala	Phe	Pro	Ser
	50					55					60				
Gly	Val	Gly	Gly	Cys	Ser	Arg	Gly	Arg	Ala	Val	Gly	Ile	Arg	Arg	Phe
65					70					75					80
Gln	Thr	Met	Phe	His	Leu	Lys	Phe	Tyr	Arg	Met	Met	Asp	Asn	Gln	Lys
			85						90					95	
Lys	Tyr	Ala	Gly	Asn	His	Gly	Arg	Lys	Pro	Lys	Pro	Asp	Lys	Met	Arg
		100						105					110		
His	Arg	Tyr	Val	Phe	Arg	Leu	Asp	Gly	Asp	Asn	Ala	Arg	Phe	Leu	
		115					120					125			
Ala	Leu	Phe	Asp	Glu	Ser	Gly	Lys	Ala	Thr	Lys	Ala	Glu	Phe	Ile	Val
	130					135					140				
Ser	Ala	Leu	Phe	Gly	Lys	Glu	Ile	Lys	Val	Ile	Lys	Leu	Asp	Lys	Gly
145					150					155					160
Thr	Gln	Asp	Phe	Tyr	Met	Arg	Leu	Thr	Thr	Phe	His	Ser	Gln	Phe	Arg

<211> 74

<212> PRT

<213> B.fragilis

 $\langle 220 \rangle$

<221> UNSURE

<222> (67)

<223> Identity of amino acid sequences at the above locations are unknown.

$\langle 400 \rangle$ 10112

[illegible]

<210> 10113

<211> 109

<212> PRT

<213> B.fragilis

<400> 10113

Lys	Ser	Pro	Asp	Tyr	Leu	Phe	Leu	Asn	Thr	Gly	Lys	Asn	Glu	Lys	Arg
1				5					10					15	
Asn	Glu	Ser	Gly	Asp	Ala	Arg	Lys	Gln	Val	Pro	Ala	Ala	Gly	Gly	Gly
			20					25					30		
Glu	Arg	Leu	Arg	Arg	Glu	Gln	Gly	Gly	Gly	Arg	Asp	Gly	Arg	Leu	Gln
		35					40					45			
Gly	Gly	Thr	Ser	Gly	Thr	Val	Leu	Arg	Tyr	Arg	Glu	Arg	Val	Arg	Gly
	50					55					60				
Asp	Pro	Leu	Gly	Leu	Ala	Gln	Gly	Gly	Glu	Gly	Ala	Ala	Gly	Val	Phe
65				70					75						80
His	Arg	Thr	Gln	Ala	Gly	Leu	Leu	His	Arg	Gly	Glu	Val	Pro	Ala	Gly
			85					90					95		
Asn	Gly	Gln	Gly	Arg	Pro	Glu	Leu	Pro	Glu	Pro	Glu	Leu			
			100					105							

<210> 10114

<211> 278

<212> PRT

<213> B.fragilis

<400> 10114

Val Asn Arg Glu Ala Ala Ala Arg Ala Ala Arg Met Asn Asn Gln Gln
 1 5 10 15
 Asn Asp Asp Met Asp Arg Gln Thr Leu Asn Val Ala Phe Ala Thr Gln
 20 25 30
 Lys Gly Gly Ser Gly Lys Thr Ala Ile Thr Val Leu Val Ala Gly Tyr
 35 40 45
 Leu His Tyr Arg Leu Gly Cys Pro Leu Ala Val Ile Asp Cys Asp Phe
 50 55 60
 Pro Gln Tyr Ser Leu Tyr Glu Met Arg Glu Arg Asp Ser Arg Ala Val
 65 70 75 80
 Leu Glu Asn Glu Tyr Leu Lys Arg Ala Ala Tyr Glu Gln Met Arg Gln
 85 90 95
 Pro Gly Arg Ala Ala Tyr Pro Val Arg Lys Cys Arg Val Glu Gln Ala
 100 105 110
 Pro Asp Thr Ala Arg Glu Leu Ala Ala Glu Gly Cys Tyr Asp Leu Leu
 115 120 125
 Phe Phe Asp Leu Pro Gly Thr Val Asn Ser Ala Gly Ile Leu Arg Thr
 130 135 140
 Ile Ala Gln Met Asp Tyr Ile Phe Ala Pro Val Ser Ala Asp Lys Ala
 145 150 155 160
 Val Leu Glu Ser Thr Leu Ser Phe Leu Asp Val Leu Gln Arg Met Met
 165 170 175
 Leu Gly Lys Glu Thr Ser Arg Leu Lys Gly Leu Tyr Leu Phe Trp Asn
 180 185 190
 Gln Val Asp Lys Arg Glu Thr Ser Gly Leu Tyr Glu Lys Tyr Gly Gln
 195 200 205
 Val Val Ala Asp Met Arg Leu Pro Met Leu Gln Thr Arg Ile Pro Asp
 210 215 220
 Thr Lys Arg Phe Arg Lys Glu Ala Asp Ser Thr Gly Arg Thr Val Phe
 225 230 235 240
 Arg Ser Thr Leu Leu Ala Pro Asp Arg Arg Met Leu Ala Gly Ser Gly
 245 250 255
 Ile Pro Glu Leu Thr Arg Glu Ile Ala Thr Ile Leu Lys Leu Glu Gly
 260 265 270
 Tyr Glu Glu Ala Ala Glu
 275

<210> 10115

<211> 213

<212> PRT

<213> B.fragilis

<400> 10115

Asn Ser Lys Asp Met Arg Thr Ile Lys Ala Ile Ile Leu Gly Val Ala
 1 5 10 15
 Cys Leu Thr Ala Gly Ala Ala Asn Ala Gln Trp Val Val His Asp Pro
 20 25 30
 Gly Asn Leu Ala Gln Gly Ile Ile Asn Thr Ala Lys Glu Ile Val Glu
 35 40 45
 Thr Ser Ala Thr Ala Gln His Thr Leu Asp Gly Phe Arg Glu Thr Ala
 50 55 60
 Lys Ile Phe Glu Gln Gly Arg Lys Tyr Tyr Asn Ala Leu Lys Ala Val
 65 70 75 80
 His Asp Val Val Lys Gly Gly Val Lys Val Lys Lys Ser Ile Gly Leu
 85 90 95
 Val Ala Asp Ile Ser Glu Ile Tyr Val Arg Asn Tyr Gln Lys Met Leu
 100 105 110
 Gly Asp Pro Asn Tyr Thr Pro Asp Glu Leu Glu Thr Ile Ser Phe Gly
 115 120 125

Tyr Ala Lys Leu Leu Ser Glu Ser Ala Asp Ile Leu Gln Asp Leu Lys
 130 135 140
 Asn Val Val Asn Val Thr Gly Met Ser Leu Ser Asp Ala Glu Arg Leu
 145 150 155 160
 Ala Ile Ile Asp Gln Ser Tyr Lys Arg Leu Leu Glu Tyr Arg Asn Leu
 165 170 175
 Val Gln Tyr Tyr Thr Asp Lys Asn Ile Ser Val Ser Tyr Leu Arg Ala
 180 185 190
 Lys Lys Lys Lys Asp Ala Asp Arg Val Val Ala Leu Tyr Gly Asp Ala
 195 200 205
 Glu Asp Arg Tyr Trp
 210

<210> 10116

<211> 359

<212> PRT

<213> B.fragilis

<400> 10116

Asn Gly Lys Asp Ala Gly Arg Thr Pro Gly Thr Arg Ser Ala Gly Ser
 1 5 10 15
 Ser Ser Thr Gly Lys Ala Arg Ser Asn Trp Met Thr Ala Arg Cys Cys
 20 25 30
 Cys Pro Met Thr Ala Thr Arg Trp Arg Lys Arg Arg Ser Gly Ser Ile
 35 40 45
 Thr Pro Gly Cys Arg Thr Ser Arg Ala Ala Ser Pro Ser Gly Trp Arg
 50 55 60
 Thr Arg Thr Val Arg Arg Ser Ser Trp Asn Thr Thr Ser Met Arg Thr
 65 70 75 80
 Thr Thr Arg Arg Thr Gly Met Glu Val Glu Leu Gly Lys Ser Glu Val
 85 90 95
 Pro Ala Leu Ala Glu Leu Lys Asp Leu Cys Arg His Glu Cys Thr Ala
 100 105 110
 Glu Arg Tyr Ala Asp Thr Val Arg Glu Phe Gly Trp Ser Leu Glu His
 115 120 125
 Val Leu Glu Asp Met Lys Thr Pro Glu Met Cys Arg Arg Ala Leu Glu
 130 135 140
 Ala Ser Ala Glu Leu Gly Tyr Gly His Leu Ala Leu Leu His His Ile
 145 150 155 160
 Pro Phe Ala Glu Val Cys Met Glu Ala Ile Arg Asp Trp Tyr Gly Glu
 165 170 175
 Gly Arg Ala Asp Leu Tyr Glu Val Ala Ser Ala Ile Arg Pro Glu Val
 180 185 190
 Phe Asp Gly Lys Met Ala Asp Phe Leu Val Ala Glu Asp Gly Arg Cys
 195 200 205
 Leu Ser Leu Leu Leu Val His Leu Gln Thr Pro Glu Leu Trp Arg Lys
 210 215 220
 Cys Ala Glu His Asn Trp Met Ser Phe Val Met Ile Pro Trp Arg Glu
 225 230 235 240
 Arg Ser Leu Glu Ala Cys Leu Thr Ala Tyr Leu Asn Tyr Pro Gly Met
 245 250 255
 Ile His Ala His Pro His Val Val Pro Gln Pro Val Asp Ser Tyr Tyr
 260 265 270
 Asn Val Tyr Ser Leu Cys Arg Leu Met Glu Gln Met Thr Gly Glu Lys
 275 280 285
 Phe Thr Cys Gly Gln Met Ala Asp Phe Tyr Gly Gly Lys Arg Met Ala
 290 295 300
 Val Lys Cys Ile Glu Val Pro Asp Gly Phe Leu Lys Asp Arg Glu Val
 305 310 315 320

Leu Ser Thr Gly Arg Lys Arg Arg Ser Ala Ser Pro Leu Ser Ala Ser
 325 330 335
 Gly Arg Ser Arg Gly Ser Arg Asn Ser Lys Ser Arg Asn Gly Thr Thr
 340 345 350
 His Pro Arg Gly Ala Thr Glu
 355

<210> 10117
 <211> 349
 <212> PRT
 <213> B.fragilis

<400> 10117
 Arg Ala Val Cys Gln Leu Gly Gly Gly Val Tyr Ala Ala His Gly Leu
 1 5 10 15
 Arg Arg Pro Ala Leu Tyr Arg Leu Ser Pro Gln Arg His Arg Ala Gly
 20 25 30
 Ala Pro Ala His Arg Phe Arg Pro Gly Gly Arg Asn Arg Ala Gly Asp
 35 40 45
 Phe Arg Gln Leu Arg Thr Arg Glu Phe Asp Glu Gly Leu Pro Gly Ala
 50 55 60
 Gly Thr Ala Val Arg Ser Cys Pro Gly Tyr Ala Gln Ala Val Glu Gly
 65 70 75 80
 Gly Thr Thr Leu Val Ala Arg Arg Leu Arg Gly Arg Gln Ser Gln Gly
 85 90 95
 Thr Val Gly Arg Ser His Pro Pro Ala Arg Pro Gly Val Ala Phe Pro
 100 105 110
 Tyr Ile Gly Arg Ile Pro Cys Arg Ala Phe Pro Tyr Arg Ile Thr Val
 115 120 125
 Asp Glu Val Lys Gly Glu Tyr Gly Gly Arg Glu Tyr His Gly Leu Thr
 130 135 140
 Tyr Ser Ala Thr Asp Arg Glu Gly Asn Lys Val Gly Lys Pro Phe Lys
 145 150 155 160
 Ser Ser Val Phe Gly Lys Glu Ala Gly Ile Ala Ala Leu Glu Arg Arg
 165 170 175
 Met His Asn Ala Ala Ala Trp Glu Lys Thr His Lys Glu Val Ala Ala
 180 185 190
 Ala Thr Ala Gly Lys Val Ala Ala Met Gln Thr Ala Gly His Asp
 195 200 205
 Arg Ala Gln Phe Glu Arg Glu Leu Met Arg Gln Gly Ile Gly Val Val
 210 215 220
 Phe Arg Gln Asn Glu Ala Gly Arg Ile Tyr Gly Ala Thr Phe Ile Asp
 225 230 235 240
 His Ala Ala Lys Ala Val Phe Asn Gly Ser Arg Leu Gly Lys Glu Phe
 245 250 255
 Ser Ala Gly Val Phe Asn Asp Leu Phe Ala Gly Gln Glu Gly Ile His
 260 265 270
 Leu Pro Gln Pro Ser Ala Gly Val Glu His Pro Thr Arg Gln Gln Glu
 275 280 285
 His Thr Gly Ala Ser Gln Trp Asp Gly His Thr Gly Tyr Arg Pro Asp
 290 295 300
 His Lys Asp Gly Thr Thr Gln Asn Val Ala Ala Ser Phe Asn Leu Phe
 305 310 315 320
 Ala Leu Val Pro Gly Gly Ala Ser Gly Asp Gln Pro Val Pro Pro Gln
 325 330 335
 Arg Lys Lys Lys Lys Arg Arg Lys Tyr Gly Arg Gln Gln
 340 345

<210> 10118

<211> 226
 <212> PRT
 <213> B.fragilis

<400> 10118

Gly Trp Leu Leu Ser His Gly Ser Val Arg Gly Cys Arg Cys Leu Pro
 1 5 10 15
 Ala Ser Ala Cys Arg Glu Pro Ala Ala Trp Ser Gly Thr Pro Ser Val
 20 25 30
 Pro Tyr Cys Pro Pro Pro Cys Gly Ser Val Ser Cys Arg Gly Cys Gly
 35 40 45
 Phe Ala Ala Ser Ala Ala Ser Cys Arg Arg Leu Pro Ala Arg Thr Ser
 50 55 60
 Arg Thr Ala Arg Ser Phe Pro Ala Tyr Arg Leu Gly Ser Arg Lys Gly
 65 70 75 80
 Lys Ala Pro Ser Gly Gly Ser Ser Leu Cys Pro Ala Ser Ser Val Ala
 85 90 95
 Ala Arg Arg Gly Arg Arg Ala Cys Ser Pro Ile Pro Pro Cys Pro His
 100 105 110
 Ser Pro Gly Arg Arg Cys Ser Pro Ser Val Arg Ser Cys Ala Gly Cys
 115 120 125
 Pro Pro Ser Ser Pro Cys Pro Ala Gly Arg Arg Arg Ala Gly Arg Ser
 130 135 140
 Ser Leu Pro Pro Pro Ala Pro Leu Pro Cys Arg Gly Leu Ala Pro Pro
 145 150 155 160
 Gly Thr Cys Ala Pro Asp Arg Arg His Ala Pro Ala Ala Ala Ser Val
 165 170 175
 Arg Lys Pro Pro Val Ser Gly Ile Arg Ser Pro Val Pro Pro Gly Cys
 180 185 190
 Pro Val Pro Ala Ser Arg Thr Gly Cys Thr Ala Gly Ser Arg Ser Arg
 195 200 205
 Ser Pro Pro Ala Asp Thr Pro Ser Gly Ser Ala Gly Ser Pro Pro Pro
 210 215 220
 Thr Pro
 225

<210> 10119
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 10119

Arg Asp His Arg Arg Gln Ala Glu Ser Leu Arg Ala Gly Ala Gly Gly
 1 5 10 15
 Glu Thr Ala Gly Gly Glu Gly Ala Leu Ala Gly Gly Leu Arg Leu Leu
 20 25 30
 Arg Arg Glu Arg Tyr Gly Arg Gly Gly Asn Gly Thr Ala Gly Gln Arg
 35 40 45
 Ala Gly Thr Gly Thr Val Gln Gly Leu Phe Gly Gln Trp Arg Arg Gln
 50 55 60
 Pro Phe Phe Arg Tyr Arg Leu Pro Gly His Gln Pro Ser Ala Arg Leu
 65 70 75 80
 Val Leu Arg Gly Thr Glu Gly Gly Arg Gly Lys Gly Gly Ala Glu Lys
 85 90 95
 Ala Gly Gly Gly Val Asp Arg Gln Ala Gly Arg Lys Gly Thr Ala Gly
 100 105 110
 Gly Arg Asn Arg
 115

<210> 10120
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 10120
 Thr Pro His Arg Ser Gly Ala Val Ala Ala Pro Ile Pro Ser Ala Pro
 1 5 10 15
 Val Pro Pro Ala Pro Pro Arg Arg Ala Val Leu Asp Cys Cys Arg Ser
 20 25 30
 Ala Arg Leu Arg Arg Pro Ser Arg Ser Val Pro Cys Thr Trp Arg Gln
 35 40 45
 Ala Arg Ser Ser Ser Pro Ser Ala Pro Pro Asp His Arg Phe Arg Pro
 50 55 60
 Pro Ala Val Pro Phe Leu Pro Ala Trp Arg Ser Thr Pro Pro Pro Ala
 65 70 75 80
 Phe Ser Ala Pro Pro Phe Pro Arg Pro Pro Ser Val Pro Arg Arg Thr
 85 90 95
 Ser Arg Ala Asp Gly
 100

<210> 10121
 <211> 596
 <212> PRT
 <213> B.fragilis

<400> 10121
 Gln Arg Asn Arg Phe Pro Asp Arg Lys Lys Leu Ser Lys Arg Thr Arg
 1 5 10 15
 Ile Asn Asn Gln Leu Lys Asn Lys Arg Ile Met Lys Thr Lys Ala Asn
 20 25 30
 Gln Ser Ala Ala Glu Arg Asn Ile Thr Met Val Ala Leu Ala Asn Ile
 35 40 45
 Gln Pro Ser Gly Phe Asn Pro Arg Lys Arg Phe Asp Glu Thr Ser Leu
 50 55 60
 Tyr Glu Leu Ala Glu Ser Ile Lys Arg Gln Gly Val Leu Gln Pro Ile
 65 70 75 80
 Thr Val Arg Pro Val Asp Gly Thr Asp Arg Tyr Gly Ile Val Phe Gly
 85 90 95
 Glu Arg Arg Tyr Arg Ala Ser Val Ile Ala Gly Arg Asp Glu Ile Pro
 100 105 110
 Ala Ile Val Ser Glu Leu Ser Asp Glu Glu Ala Glu Glu Met Ala Ile
 115 120 125
 Thr Glu Asn Leu Gln Arg Lys Asp Val Thr Pro Val Glu Glu Ala Ala
 130 135 140
 Ala Tyr Gln Arg Leu Ile Glu Ser Gly Arg His Thr Val Gln Thr Leu
 145 150 155 160
 Ala Val Leu Phe Gly Lys Asn Glu Asn Tyr Ile Arg Thr Arg Leu Lys
 165 170 175
 Phe Thr Ala Leu Ile Pro Glu Ile Ala Ala Leu Leu Asp Ala Asp Glu
 180 185 190
 Ile Thr Ile Ser Val Ala Ala Glu Ile Cys Arg Tyr Gly Glu Asp Ile
 195 200 205
 Gln Arg Glu Val Tyr Glu Lys His Leu Gln Asp Glu Gly Thr Tyr Asn
 210 215 220
 Ser Trp Arg Gly Leu Lys Ala Ala Asp Val Ala Arg Arg Ile Glu Gln
 225 230 235 240
 Asn Phe Thr Thr Asp Leu Gln Tyr Tyr His Phe Asp Lys Ala Glu Cys
 245 250 255

10120 10121 596 PRT B.fragilis

Ala Thr Cys Ala His Asn Thr Asn Asn Leu Leu Leu Phe His Asp Gly
 260 265 270
 Gly Cys Gly His Cys Ala Asn Arg Thr Cys Leu Ala Glu Met Asn Ala
 275 280 285
 Ser Phe Leu Met Glu Arg Ala Val Gln Ile Met Arg Asn Gln Pro Glu
 290 295 300
 Val Ser Leu Cys Arg Asp Cys Tyr Thr Ala Asn Glu Thr Val Val Glu
 305 310 315 320
 Arg Leu Thr Ala Ser Gly Tyr Glu Val Glu Thr Leu Asp Arg Tyr Thr
 325 330 335
 Ala Phe Pro Ser Cys Pro Lys Glu Pro Lys Ala Glu Asn Phe Asn Asp
 340 345 350
 Pro Glu Arg Tyr Gly Glu Ala Arg Thr Arg Tyr Glu Gln Gln Trp Ala
 355 360 365
 Asp Tyr Met Glu Gln Glu Glu Glu Ile Thr Arg Arg Ser Gly Ala Gly
 370 375 380
 Glu Ile Thr Val Tyr Ala Lys Ile Gly Gln Lys Glu Ile Thr Phe Cys
 385 390 395 400
 Tyr Val Glu Asn Val Thr Glu Thr Glu Thr Ala Asp Gly Thr Pro Ala
 405 410 415
 Pro Ala Pro Leu Ser Pro Val Glu Lys Leu Glu Lys Gln Asp Lys Arg
 420 425 430
 Asn Lys Glu Ile Ala Leu Glu Arg Thr Val Glu Asp Thr Lys Lys Gln
 435 440 445
 Ile Leu Glu Ala Asp Ile Thr Gly Gly Lys Phe Ser Ala Asp Glu Asp
 450 455 460
 Thr Met Leu Tyr Phe Phe Leu Leu Ser Ser Leu Arg Lys Glu His Phe
 465 470 475 480
 Ala Ala Val Gly Ile Ala Glu Asp Lys Pro Tyr Ile Thr Asp Glu Asp
 485 490 495
 Lys Met Gly Ile Ile Gly Asn Leu Thr Val Lys Met Lys Thr Ile Ile
 500 505 510
 Arg Arg Asp Phe Leu Val Ala Asn Phe Lys Gly Ala Tyr Gly Asn Asn
 515 520 525
 Thr Val Ala Thr Leu Leu Leu Asp Phe Ala Arg Arg His Met Pro Glu
 530 535 540
 Glu Leu Ala Asn Ile Glu Arg Glu Tyr Asn Gly Val Tyr Glu Lys Arg
 545 550 555 560
 His Gln Arg Ile Glu Glu Lys Lys Ala Val Leu Leu Val Gln Glu Arg
 565 570 575
 Ala Arg Glu Arg Lys Val Thr Gln Pro Glu Glu Gln Pro Gln Pro Glu
 580 585 590
 Glu Ile Ala Ala
 595

<210> 10122

<211> 78

<212> PRT

<213> B.fragilis

<400> 10122

Gly Glu Asn Arg Glu Phe Asn Gly Asn Leu Thr Glu Ile Lys Arg Gly
 1 5 10 15
 Leu Ser Lys Lys Leu Gly Gly Thr Leu Ala Gly Ile Glu Arg Glu Ser
 20 25 30
 Asp Arg Asn Gln Thr Lys Ile Glu Arg Lys Thr Ala Leu Thr Leu Leu
 35 40 45
 Met Gln Leu Gly Arg Asp Leu Phe Gln Gly Arg Lys Glu Gln Ser Phe
 50 55 60

Gly Phe Glu Lys Thr Cys Tyr Leu Glu Ile Lys Gly Leu Ile
65 70 75

<210> 10123
<211> 457
<212> PRT
<213> B.fragilis

<400> 10123

Trp	Lys	Asn	Arg	Pro	Lys	Lys	Lys	Gln	Arg	Pro	Thr	Gln	His	Val	Thr
1				5					10					15	
Val	Ala	Asp	Ala	Pro	Thr	Pro	Glu	Thr	Gly	Asn	Gly	Lys	Lys	Glu	Asp
			20					25					30		
Lys	Gly	Gly	Gly	Lys	Lys	Glu	Lys	Lys	Thr	Ala	Lys	Pro	Leu	Thr	Pro
		35					40					45			
Lys	Gln	Leu	Gln	Gln	Arg	Lys	Lys	Leu	Met	Val	Tyr	Pro	Leu	Met	Gly
	50					55				60					
Leu	Leu	Phe	Leu	Gly	Ser	Met	Trp	Leu	Ile	Phe	Ala	Pro	Ser	Glu	Glu
65					70				75					80	
Arg	Asp	Val	Asn	Arg	Asp	Thr	Val	Gly	Ala	Phe	Asn	Ala	Asp	Ile	Pro
			85					90					95		
Leu	Pro	Glu	Asn	Asp	Gly	Ile	Ile	Gly	Asp	Lys	Arg	Lys	Ala	Tyr	Glu
			100					105					110		
Gln	Ala	Gln	Ala	Glu	Lys	Gln	Gln	Ala	Glu	Lys	Val	Arg	Ser	Leu	Glu
		115					120					125			
Asp	Phe	Ala	Phe	Ser	Glu	Glu	Ser	Asp	Met	Asp	Gly	Val	Glu	Met	Glu
	130					135				140					
Leu	Pro	Asp	Ser	Glu	Pro	Glu	Arg	Glu	Pro	Phe	Arg	Asp	Tyr	Ser	Asp
145					150					155				160	
Asn	Gly	Gly	Gly	Ser	Arg	Ser	Ser	Val	Thr	Ala	Tyr	Arg	Asp	Ile	Asn
				165				170					175		
Arg	Gln	Leu	Gly	Ser	Phe	Tyr	Glu	Glu	Pro	Lys	Val	Asp	Gly	Glu	Lys
			180					185					190		
Glu	Glu	Leu	Lys	Arg	Gln	Val	Glu	Glu	Leu	Thr	Ala	Lys	Leu	Glu	Glu
		195					200					205			
Arg	Glu	Arg	Gln	Ala	Gly	Gly	Ile	Asp	Asp	Gln	Val	Ala	Leu	Met	Glu
	210					215				220					
Lys	Ser	Tyr	Glu	Leu	Ala	Ala	Lys	Tyr	Met	Gly	Gln	Asn	Gly	Lys	Asp
225					230					235				240	
Gly	Ala	Ala	Val	Gln	Asn	Asp	Asn	Ser	Pro	Arg	Gln	Pro	Ala	Val	Ala
				245					250					255	
Val	Gln	Val	Ala	Arg	Glu	Arg	Thr	Val	Ser	Gly	Leu	Gln	Gln	Pro	Leu
			260					265					270		
Ser	Asp	Ala	Glu	Phe	Met	Arg	Arg	Tyr	Ser	Gln	Pro	Arg	Asn	Tyr	Gly
	275						280					285			
Phe	Asn	Thr	Ala	Val	Gly	Ser	Gly	Tyr	Thr	Met	Gly	Lys	Asn	Thr	Ile
	290					295					300				
Arg	Ala	Cys	Ile	His	Gly	Asp	Gln	Thr	Ile	Met	Asp	Gly	Gln	Thr	Val
305					310					315				320	
Lys	Leu	Arg	Leu	Leu	Glu	Pro	Leu	Gln	Ala	Gly	Asn	Leu	Val	Ile	Pro
				325					330					335	
Gln	Asn	Thr	Leu	Val	Ala	Gly	Thr	Gly	Lys	Val	Gln	Gly	Glu	Arg	Leu
			340					345					350		
Asp	Ile	Val	Val	Ser	Ser	Ile	Glu	Tyr	Arg	Gly	Asn	Leu	Leu	Pro	Val
	355						360					365			
Glu	Leu	Ala	Val	Tyr	Asp	Ser	Asp	Gly	Gln	Lys	Gly	Leu	Ser	Val	Pro
	370					375					380				
Ser	Ser	Leu	Glu	Gln	Glu	Ala	Ala	Lys	Glu	Ala	Met	Ala	Asn	Ile	Gly
385					390					395					400

10123 457 PRT B.fragilis

Gly Gly Leu Gly Thr Ser Ile Ser Phe Ala Arg Ser Ala Gly Gln Gln
 405 410 415
 Val Ala Met Asp Ile Thr Arg Gly Leu Met Gln Gly Gly Ser Gln Tyr
 420 425 430
 Leu Ala Lys Lys Phe Arg Thr Val Lys Val His Leu Lys Ala Gly Tyr
 435 440 445
 Glu Leu Met Leu Tyr Ala Lys Gln Gln
 450 455

<210> 10124
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 10124
 Arg Ala Ala Arg Cys Arg Ser Arg His Thr Ser Thr Thr Cys Trp His
 1 5 10 15
 Ser Thr Ser Ser Asn Thr Gly Arg Arg Ser Arg Arg His Thr Pro Gly
 20 25 30
 Asn Trp Arg Thr Ser Phe Lys Lys Glu Gly Gly Asn Gly Met Ile Leu
 35 40 45
 Lys Leu Ser Leu Thr Val Leu Leu Tyr Tyr Leu Ala Val Leu Trp
 50 55 60
 Lys Tyr Tyr Arg Gln Asp Ile Ala Gly Ile Phe Gly Thr Ala Glu Thr
 65 70 75 80
 Asp Glu Asp Thr Asp Gly Thr Gly Lys Glu Pro Gly Gln Pro Gly Glu
 85 90 95
 Pro Tyr Thr Val Met Gly Glu Ser Thr Tyr Leu Pro Phe Gly Ala Glu
 100 105 110
 Asp Gly Glu Glu Ala Val Ala Gly Ala Val Asp Glu Leu Ala Ala Glu
 115 120 125
 Asp Asp Gly Ala Asp Tyr Ser Asp Ile Glu Pro Glu Glu Asp Glu Glu
 130 135 140
 Glu Thr Asp Tyr Glu Pro Thr Pro Glu Glu Ile Arg Glu Leu Glu Glu
 145 150 155 160
 Glu Glu Glu Leu Gly Ala Tyr Tyr Pro Asp Gly Asn Pro Asp Phe Ala
 165 170 175
 Thr Gly Tyr Ser Phe Asp Asp Leu Lys Lys Val Arg Arg Val Leu Val
 180 185 190
 Ser Asp Asn Ala Asp Glu Lys Ala Glu Arg Glu Ala Arg Glu Val Leu
 195 200 205
 Pro Ser Val Met Gly Ser Asp Ile Trp Glu Ala Met Leu Asp Glu Phe
 210 215 220
 Glu Gly Ala Arg Lys Arg Val Ala Arg Leu Met Asp Asn His Asn Val
 225 230 235 240

<210> 10125
 <211> 194
 <212> PRT
 <213> B.fragilis

<400> 10125
 Ala Met Lys Arg Leu Leu Phe Ile Ile Leu Leu Phe Gly Val Cys Leu
 1 5 10 15
 His Val Asn Arg Ala His Ala Gln Arg Cys Leu Pro Gly Met Arg Gly
 20 25 30
 Ile Gln Leu Thr Gly Gly Leu Ser Asp Asn Met Arg Trp Lys Asn Gly
 35 40 45
 Asp Gly Phe Gly Tyr His Ala Gly Ile Ala Val Ser Thr Tyr Thr Lys

50		55		60
Asn Ala His His Trp Val Val Gly Val Glu Tyr Leu Glu Lys Arg Tyr				
65		70		80
Gly Tyr Arg Asp Cys Leu Tyr Pro Ala Ser Gln Phe Thr Gly Glu Gly				
	85		90	95
Gly Tyr Tyr Leu Asn Phe Leu Ser Asp Arg Lys Lys Thr Phe Phe Ala				
	100		105	110
Ala Leu Gly Leu Ser Ala Leu Ala Gly Tyr Glu Thr Val Asn Trp Gly				
	115		120	125
Glu Ser Leu Leu Pro Asp Gly Ser Arg Leu Thr Asp Glu Asp Asn Phe				
	130		135	140
Ile Tyr Gly Gly Ala Leu Thr Leu Glu Leu Ser Ala Tyr Val Thr Asp				
145		150		155
Lys Ile Val Leu Leu Val Asn Gly Arg Gln Arg Val Leu Phe Gly Gly				
	165		170	175
Asp Cys Gly Lys Phe His Thr Gln Val Gly Val Gly Ile Arg Phe Met				
	180		185	190
Ile Arg				

<210> 10126
 <211> 155
 <212> PRT
 <213> B.fragilis

<400> 10126
Leu Tyr Met Arg Thr Met Ile Tyr Arg Ile Phe Thr Gly Cys Tyr Ile
1 5 10 15
Val Ala Ala Leu Val Leu Val Ala Ala Cys Asn Asp Gly Leu Asp Ile
20 25 30
Gln Thr Lys Tyr Leu Phe Thr Val Glu Thr Met Pro Val Pro Lys Glu
35 40 45
Leu Lys Val Asn Glu Thr Ala Glu Ile Arg Cys Glu Leu Lys Arg Glu
50 55 60
Gly Arg Trp Glu Asp Ala Arg Tyr Thr Ile Arg Trp Phe Leu Phe Asp
65 70 75 80
Gly Glu Gly Thr Leu Lys Leu Asp Asp Gly Thr Val Leu Leu Pro Asn
85 90 95
Asp Arg Tyr Pro Leu Glu Lys Glu Thr Phe Arg Leu Tyr Tyr Thr Arg
100 105 110
Leu Ser Asp Glu Gln Ser Ser Phe Thr Val Trp Val Glu Asp Ser Asp
115 120 125
Gly Gln Ala Val Glu Leu Glu Tyr Asp Phe Asn Ala Asp Asn Asp Lys
130 135 140
Glu Asp Gly Asp Gly Ser Gly Thr Gly Lys Glu
145 150 155

<210> 10127
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 10127
Arg Gln Met Arg Gln Lys Arg Ile Leu Phe Thr Ala Ala Cys Ile Leu
1 5 10 15
Ala Ala Val Gly Ala Met Ala Gln Gly Asn Gly Gln Ala Gly Ile Thr
20 25 30
Glu Ala Thr Gln Met Val Thr Ser Tyr Phe Glu Pro Gly Thr Lys Leu
35 40 45

Ile Tyr Ala Ile Gly Ala Val Val Gly Leu Ile Gly Gly Val Lys Val
 50 55 60
 Tyr Gly Lys Phe Ser Ser Gly Asp Pro Asp Thr Ser Lys Thr Ala Ala
 65 70 75 80
 Ser Trp Phe Gly Ala Cys Ile Phe Leu Ile Val Ala Ala Thr Ile Leu
 85 90 95
 Arg Ser Phe Phe Leu
 100

<210> 10128

<211> 251

<212> PRT

<213> B.fragilis

<400> 10128

Arg Asn Pro Arg Asn Asn Arg Asn Pro Lys Arg Leu Gln Pro Lys Asp
 1 5 10 15
 Lys Gly Gln Gly Gly Glu Ile Arg Pro Leu Leu Ser Phe Val Ser Arg
 20 25 30
 Ser Gly Lys Glu Arg Ser Gln Arg Asn Arg Phe Leu Asn Phe Gln Ile
 35 40 45
 Phe Lys Leu Met Arg Thr Val Gln Arg Thr Tyr Thr Leu Phe Gly Ile
 50 55 60
 Ala Glu Leu Glu Asp Glu Ala Arg Gln Lys Ala Tyr Thr Asp Trp Leu
 65 70 75 80
 Ala Lys Gly Asn Asp Tyr Pro Tyr Ala Ser Glu Asn Cys Asp Thr Leu
 85 90 95
 Glu Ala Phe Cys Asn Leu Phe Arg Ile Ala Cys Thr Asn Tyr Cys Tyr
 100 105 110
 Asp Ser Cys Thr Tyr Ala Tyr Arg Phe His Thr Gly His Glu Glu Glu
 115 120 125
 Thr Glu Arg Leu Ser Ser Val Arg Leu Leu Ala Tyr Leu Tyr Asn Asn
 130 135 140
 Phe His Ala Glu Leu Tyr Lys Pro Lys Val Tyr Trp Thr Lys Asp Arg
 145 150 155 160
 Lys Lys Arg Arg Arg Ser Arg Ile Ser Val Thr Cys Glu Cys Pro Phe
 165 170 175
 Thr Gly Val Val Ser Asp Glu Ile Ile Leu Gln Pro Leu Met Asp Phe
 180 185 190
 Met Arg Ser Pro Asp Thr Arg Asn Phe Lys Glu Leu Met Arg Asp Cys
 195 200 205
 Leu Glu Asn Phe Phe Arg Ser Cys Arg Asp Asp Cys Glu Tyr Cys Glu
 210 215 220
 Ser Glu Glu Tyr Phe Thr Asp Glu Ser His Lys Asn Asn Trp Glu Tyr
 225 230 235 240
 Leu Ile Asp Gly Thr Leu Phe Ile Glu Thr Ala
 245 250

<210> 10129

<211> 110

<212> PRT

<213> B.fragilis

<400> 10129

Trp Arg Thr Ser Asp Met Glu Val Ile Thr Lys Asp Thr Glu Glu Val
 1 5 10 15
 Arg Ala Tyr Phe Glu Ala Leu Glu Glu Gly Met Arg Tyr Ile Asp Thr
 20 25 30
 Val Thr Ala His Phe Arg Pro Ala Met Asn Gly Glu Val Tyr Phe Thr

Material	Modulus	Poisson's Ratio	Thermal Expansion Coefficient	Thermal Conductivity	Electrical Resistivity	Electrical Conductivity	Thermal Conductivity	Electrical Resistivity	Electrical Conductivity
Aluminum	70 GPa	0.33	23.6 $\mu\text{m/m}^\circ\text{C}$	167 W/mK	0.028 $\mu\Omega\cdot\text{cm}$	35.4 MS/m	167 W/mK	0.028 $\mu\Omega\cdot\text{cm}$	35.4 MS/m
Steel	200 GPa	0.3	11.7 $\mu\text{m/m}^\circ\text{C}$	50 W/mK	0.143 $\mu\Omega\cdot\text{cm}$	6.91 MS/m	50 W/mK	0.143 $\mu\Omega\cdot\text{cm}$	6.91 MS/m
Copper	110 GPa	0.34	16.6 $\mu\text{m/m}^\circ\text{C}$	385 W/mK	0.017 $\mu\Omega\cdot\text{cm}$	58 MS/m	385 W/mK	0.017 $\mu\Omega\cdot\text{cm}$	58 MS/m
Carbon Fiber	230 GPa	0.2	0.5 $\mu\text{m/m}^\circ\text{C}$	12 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	12 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Kevlar	140 GPa	0.35	7.0 $\mu\text{m/m}^\circ\text{C}$	0.04 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	0.04 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Fiberglass	70 GPa	0.25	5.0 $\mu\text{m/m}^\circ\text{C}$	0.04 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	0.04 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Concrete	30 GPa	0.2	10.0 $\mu\text{m/m}^\circ\text{C}$	1.4 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	1.4 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Brass	100 GPa	0.34	18.7 $\mu\text{m/m}^\circ\text{C}$	109 W/mK	0.020 $\mu\Omega\cdot\text{cm}$	50 MS/m	109 W/mK	0.020 $\mu\Omega\cdot\text{cm}$	50 MS/m
Titanium	105 GPa	0.34	8.6 $\mu\text{m/m}^\circ\text{C}$	7 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	7 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Inconel	200 GPa	0.3	16.0 $\mu\text{m/m}^\circ\text{C}$	11 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	11 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Aluminum Nitride	380 GPa	0.17	4.0 $\mu\text{m/m}^\circ\text{C}$	160 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	160 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Silicon	130 GPa	0.17	2.6 $\mu\text{m/m}^\circ\text{C}$	149 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	149 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Glass	70 GPa	0.2	0.5 $\mu\text{m/m}^\circ\text{C}$	1.0 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	1.0 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Carbon Nanotube	1 TPa	0.2	0.001 $\mu\text{m/m}^\circ\text{C}$	3500 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	3500 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Graphene	1 TPa	0.2	0.001 $\mu\text{m/m}^\circ\text{C}$	5000 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	5000 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Polymer	1 GPa	0.3	50.0 $\mu\text{m/m}^\circ\text{C}$	0.2 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	0.2 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m
Composites	150 GPa	0.25	10.0 $\mu\text{m/m}^\circ\text{C}$	1.0 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m	1.0 W/mK	0.0001 $\mu\Omega\cdot\text{cm}$	100 MS/m

<400> 10130

Thr 1	Arg	Arg	Arg	Cys 5	Ala	Ser	Ala	Thr	Thr 10	Ser	Ser	Ala	Cys	Thr 15	Pro
Ser	Arg	Thr	Arg	Lys	Thr	Cys	Arg	Ala	Arg	Trp	Arg	Arg	Thr	Ala	Val
			20					25					30		
Thr	Ser	Gly	Ser	Arg	Pro	Thr	Ala	Arg	Thr	Ala	Gly	Cys	Arg	Ser	Ala
		35					40					45			
Gly	Pro	Gly	Gly	Leu	Ala	Ala	Gly	Leu	Gln	Pro	Leu	Leu	Gln	Pro	Val
	50					55					60				
His	Leu	His	Arg	Arg	Pro	Arg	Gly	Glu	Pro	Glu	Thr	Leu	Arg	Ala	Asp
65				70					75						80
Arg	Pro	Glu	His	Ala	Leu	Ala	Leu	Pro	Leu	Leu	Pro	Leu	Gln	Pro	Asp
				85					90					95	
Gln	Gln	Gly	Leu	Asp	Arg	Gly	Ile	Pro	Glu	Arg	Gly	Ala	Leu	Glu	Arg
			100				105						110		
Ala	Asp	Leu	Gly	Ala	Leu	Pro	Leu	Gln	Arg	Asp	Gly	Met	Glu	Arg	Arg
		115					120					125			
Gln	Gly	Gly	Thr	Gln	Ala	His	Gln	Glu	Arg	Gly	Gly	Gln	Pro	Ala	Arg
	130					135					140				
Pro	Asp	Gly	Val	Gln	Ala	Glu	Ala	Gln	His	Gly	Gly	Arg	Ala	His	Ala
145				150					155						160
Leu	Leu	Gly	Gly	Asp	Thr	Gly	Gln	Arg	Gly	Gly	Leu	Pro	Leu	Arg	Gly
				165					170					175	
Glu	Leu	Leu	His	Val	His	Pro	Ala	Ser	Pro	Val	Leu	Leu	His	Arg	Arg
			180					185					190		
Asp	Glu	Leu	Gln	Gly	Leu	Ala	Leu	Thr	Leu	Arg	His	Gln	Asp	Gly	Gly
	195						200					205			
Gln	Asp	Asp	Gly	Gln	Thr	Ala	Ala	Ser	Gly	His	Gln	Arg	Pro	Ala	Asp
	210					215					220				
Glu	Glu	Arg	Gly	Asp	Leu	Glu	Pro	Gln	Gln	Val	Cys	Pro	Arg	Ser	Glu
225				230						235					240
Arg	Lys	Arg	Gln	Val	Val	Leu	His	Glu	Pro	Pro	Arg	Ala	Pro	Val	Leu
				245					250					255	
Arg	Ala	Glu	Gln	Pro	His	Arg	Ala	Asp	Arg	His	Gly	Gln	Leu	Val	Pro
			260					265					270		
Arg	Ala	Val	Arg	Ala	Asp	Thr	Pro	Gln	Asp	Gln	Gly	Arg	Gly	Arg	Asp
	275						280					285			
Leu	Leu	His	Val	His	Gly	Gly	Glu	Ala	His	Gln	Leu	Gln	Pro	Leu	Leu
	290				295						300				
His	Gly	Arg	Leu	Gln	Val	Gln	Arg	Gly	Glu	Glu	Gly	Gln	His	Gln	Asp
305				310						315					320
Val	Ala	Ala	Gly	Ala	Val	Glu	Gly	Arg	Gly	Arg	Glu	Asn	His	Glu	Asp
				325					330					335	
Gly	Glu	Arg	Arg	Ala	Gly	Gln	Cys	Gly	Val	Gly	Val	His	Pro	Pro	Asp

340	345	350
Thr Ala Glu Pro Gly His Arg	Pro Leu Val Arg His	Leu Leu Arg Val
355	360	365
His Ala Glu Arg Leu Pro Glu Gly	Ala Gly Cys Lys	Gly His Gln Gly
370	375	380
Glu Pro Glu Gly Leu Gln His Arg	Gln Leu Pro Asp	His Thr Gln Ala
385	390	395
Val Leu Gln Gly Arg Thr Leu		400
405		

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 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 10131

Ala Cys Ser Gly Thr Arg His Arg Pro Arg Gly Arg Thr Leu Ser Asp	
1 5 10 15	
Gln Gly Trp Lys Gly Arg Ser Gly Arg Thr Ser Val Ser Cys Arg Ser	
20 25 30	
Pro Ala Gln Pro Thr Gly Thr Ala Val Arg Ala Val Leu Gly Thr Thr	
35 40 45	
Ala Gly Cys Ser Ala Ser Cys Cys Ile Pro Ser Gly Arg Cys Thr Ser	
50 55 60	
Pro Pro Ser Ser Ser Ser Trp Ala Thr Ser Pro Ala Arg Arg Ala	
65 70 75 80	
Ser Cys Arg Ser Pro Pro Cys Ser Pro Asp Met Pro Ser Pro Gly His	
85 90 95	
Gly Gly Thr Pro Pro Ser Pro Ala Ser Pro Ser Ala Pro Gly Ile Gly	
100 105 110	
Ser Cys Arg Arg Ser Val Ile Arg Ala Ser Arg Gly Ser Pro Ser Pro	
115 120 125	
Arg Ala Arg Ala Pro Cys	
130	

<210> 10132
 <211> 476
 <212> PRT
 <213> B.fragilis

<400> 10132

Arg Cys Thr Gly Cys Ser Ser Gly Cys Ser Pro Ala Ala Ser Pro Pro	
1 5 10 15	
Gly Pro Ala Glu Arg Gln Pro Ala Val Arg Ala Val Gly Arg Glu Pro	
20 25 30	
Leu Val Thr Ala Val Arg Arg His Leu Ala Arg Gln Val Phe Arg Val	
35 40 45	
Arg Glu Gly Val Gln Ala Glu Asp Val Val Ala Asp Ala His Leu Leu	
50 55 60	
Arg Val Gln Leu Asp Val Leu Gln His Arg Arg Val Val Leu Arg Glu	
65 70 75 80	
Arg Glu Val Leu Leu His Asp Ala Arg Arg Phe Arg Pro Ser Asp	
85 90 95	
Leu Val Arg Arg Glu Ala Ala Gln Arg Asn Lys Thr Ala Val Val His	
100 105 110	
Asp Leu Leu Glu Leu Pro Asp Gly Phe Glu Glu Pro Arg Asn Arg Leu	
115 120 125	
Pro Val Leu Tyr Leu Leu Gly Asp Lys Pro Ala Leu Ala Glu Gly Gly	
130 135 140	

Glu Arg Ala Phe Leu Thr Ala Pro His Leu Arg Gly Leu Cys Gln Glu
 145 150 155 160
 Gln Val Ala Gly Val Arg Glu Glu Arg Ala Phe Val Glu Val Pro Leu
 165 170 175
 Lys Ala Pro Ala Gln Glu Ala Gln Val Val Pro Val Arg Phe Arg Pro
 180 185 190
 Val Leu Leu Leu Asp Glu Glu Val Leu Leu Val Tyr Asp Gly Ile Leu
 195 200 205
 Arg Gln His Leu His Arg Leu Val Pro Ser Arg Val Asp Arg Leu Val
 210 215 220
 Leu Ala Pro Cys Asn Gly Glu Gln Phe Arg Lys Phe His Pro Glu Gly
 225 230 235 240
 Asp Arg His Val Arg Leu Leu Ala His Asp Ala Ala Val Leu His Arg
 245 250 255
 Gln Gln Arg Glu Leu Ala Phe Glu Arg Arg Arg Phe His Tyr Val Phe
 260 265 270
 His Ser Cys Gln Cys Leu Lys Ile Asn Asn Arg Gly Ile Phe Ser Arg
 275 280 285
 Phe Thr Thr Tyr Leu Gly Cys Leu Leu Arg Ala Ala Ala Phe Ile Ser
 290 295 300
 Pro Cys Val Pro Tyr Arg Ala Phe Ser Arg Lys Val Ser His Thr Ser
 305 310 315 320
 Ser Val Ala Ala Ala Thr Pro Lys Pro Met His Thr His Trp Phe Thr
 325 330 335
 Pro Ala Met Tyr Arg Met Thr Asn Thr Thr Lys Thr Ala Ser Arg Pro
 340 345 350
 Pro Gln Lys Met Lys Arg Tyr Trp Leu Ser Ser Pro Leu Asn Ser Thr
 355 360 365
 Phe Leu Pro Ile Pro Leu Leu Ile Ser Met Ser Ile Val Ala Val Leu
 370 375 380
 Gln Glu Glu Arg Thr Gln Asp Ser Gly Ser Tyr Tyr Gln Glu Asp Ala
 385 390 395 400
 Gly Ser Glu Pro Ala Arg Arg Arg Leu Arg Arg Val Gly Val Ala Gly
 405 410 415
 Ala Glu Leu Pro Ile Tyr Phe His Pro Ser Asp Gln Ala Asp His Arg
 420 425 430
 Thr Asp Gly Val Asn Gln Phe Arg Pro Arg Phe Lys Ile Arg Gly Asp
 435 440 445
 His Leu Arg Gly Phe Gly Asp Thr Arg Leu Pro Val Ser Leu Arg His
 450 455 460
 Cys Ala His Gly Ser Glu Tyr Ala Gly Arg Arg Glu
 465 470 475

<210> 10133

<211> 286

<212> PRT

<213> B.fragilis

<400> 10133

Gly Asp Ala Gly Phe Leu His Ala Pro Asp His Phe Pro Leu Ala Val
 1 5 10 15
 Pro Cys His Arg His Glu Leu Gln Pro Met Arg Ala Cys Ala Gln Ile
 20 25 30
 Gln Phe Leu Gly Glu Glu Ser Pro Arg Phe Pro Leu Gln Ala Gly Ala
 35 40 45
 Ala His Pro Arg Thr Gly Arg Val Lys Gln Ala Asp Phe Arg Thr Gly
 50 55 60
 Gly Gly Val Pro Glu Gln Ile Pro Arg Pro Met Ile Ala Lys Ile Ser
 65 70 75 80

His Gly Ser Ser Leu Tyr Gly Val Leu Ala Tyr Asn Gln Leu Lys Val
 85 90 95
 Asp Glu Arg His Ala Asp Val Leu Phe Thr Ser Arg Ile Ile Glu Pro
 100 105 110
 Gln Gly Asp Asn Pro Tyr Thr Ile Gly His Leu Ser Arg Ser Phe Gly
 115 120 125
 Asp Tyr Leu Thr Ala Asn Arg Lys Thr Glu Lys Pro Val Leu His Ile
 130 135 140
 Ser Leu Asn Pro Asp Pro Lys Asp Cys Leu Ser Glu Glu Arg Phe Val
 145 150 155 160
 Ser Leu Ala Glu Glu Tyr Met Arg Arg Met Gly Phe Gly Asp Gln Pro
 165 170 175
 Tyr Ile Val Tyr Arg His Asn Asp Ile Gly Arg Glu His Leu His Ile
 180 185 190
 Val Ser Val Arg Val Asp Glu Thr Gly Arg Ala Ile Ser Asp Ser Tyr
 195 200 205
 Glu His Gly Ser Ser Met Lys Val Cys Arg Glu Leu Glu Arg Gln Phe
 210 215 220
 Gly Leu Val Pro Ala Thr Pro Lys Gln Trp Lys Glu Gly Leu Pro Leu
 225 230 235 240
 Ser Pro Val Gly Tyr Gly Asp Asp Asn Leu Lys Gly Gln Leu Ala Gly
 245 250 255
 Val Ile Arg Pro Leu Ala Arg Glu Trp Arg Phe Arg Thr Leu Gly Glu
 260 265 270
 Tyr Arg Ala Val Leu Ser Leu Thr Ala Ser Arg Trp Thr Arg
 275 280 285

<210> 10134
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 10134
 Ile Met Glu Gly Lys Lys Phe Lys His Lys Tyr Leu Pro Tyr Leu Thr
 1 5 10 15
 Cys Val Val Val Ala Ala Thr Arg Lys Gly Tyr Lys Val Leu Glu Thr
 20 25 30
 Gln Val Leu Gly Gly Arg Arg Lys Pro Lys Thr Lys Thr Ala Tyr Tyr
 35 40 45
 Tyr Asp Ile Asp Phe Asp Lys Glu Arg Gly Leu Trp Gln Glu Glu Gly
 50 55 60
 Lys
 65

<210> 10135
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 10135
 Trp Gly Thr Gly Gln Ile Ser Ser Pro Ala Cys Pro Leu Ser Lys Pro
 1 5 10 15
 Ser Leu Ser Lys Thr Asp Trp Asn Ser Tyr Phe Thr Phe Ala Val Ile
 20 25 30
 Ser Ser Ile Arg Phe Val Ile Phe Ser Met Glu Tyr Phe Ser Ile Asn
 35 40 45
 Leu Leu Phe Ala Ala Ser Ala Phe Ser Leu Ser Leu Ile Asn Phe Ser
 50 55 60
 Cys Gly Lys Ser Asp

65

<210> 10136
 <211> 684
 <212> PRT
 <213> B.fragilis

<400> 10136

Gly	Leu	Gln	Gly	Lys	Ala	His	Ser	Ile	Ala	Arg	Thr	Cys	Ser	Gly	Lys
1				5					10					15	
Pro	Asp	Pro	Lys	Gly	Asn	Ala	Pro	Thr	Ile	Ile	Trp	Lys	His	Glu	Leu
			20					25					30		
Thr	Val	Ile	Thr	Tyr	Phe	Leu	Lys	Val	Ile	Arg	Ile	Met	Pro	Leu	Phe
		35					40					45			
Arg	Asn	Phe	Glu	Thr	Ser	Asn	Glu	His	Gly	Tyr	Asp	Arg	Asn	Ile	Leu
	50					55					60				
Thr	Phe	Leu	Asn	Glu	Tyr	Ala	Glu	Ile	Ser	Asp	Pro	Gln	Tyr	Ala	Ile
65					70					75					80
Met	Leu	Arg	Gly	Ala	Trp	Gly	Cys	Gly	Lys	Thr	Phe	Phe	Ile	Arg	Gln
			85						90					95	
Trp	Ile	Lys	Gln	Leu	Lys	Asn	Asp	Lys	Asp	Ala	Asp	Lys	Leu	Lys	Trp
			100					105						110	
Arg	Pro	Ile	Tyr	Val	Ser	Leu	Tyr	Gly	Leu	Thr	Thr	Thr	Gln	Gln	Ile
		115					120						125		
Thr	Glu	Gln	Val	Asn	Lys	Glu	Ile	Ser	Pro	Trp	Leu	Tyr	Ser	Lys	Gly
	130					135					140				
Met	Lys	Leu	Ala	Lys	Asn	Ile	Leu	Lys	Ala	Ala	Ser	Lys	Ile	Ala	Leu
145					150					155					160
Lys	Tyr	Asp	Ile	Asp	Gly	Asp	Gly	Lys	Asp	Glu	Gly	Ser	Val	Thr	Cys
				165					170					175	
Asp	Leu	Asp	Ser	Ile	Leu	Leu	Leu	Lys	Glu	Glu	Asn	Ser	Glu	Ile	Lys
			180					185					190		
Gly	Asn	Lys	Ile	Leu	Ile	Phe	Asp	Asp	Leu	Glu	Arg	Cys	Asp	Val	Lys
	195						200					205			
Leu	Glu	Thr	Leu	Leu	Gly	Tyr	Ile	Asn	Tyr	Phe	Ser	Glu	His	Cys	Lys
	210					215					220				
Cys	Lys	Val	Ile	Ile	Ile	Gly	Asp	Glu	Asn	Lys	Ile	Ser	Glu	Lys	Glu
225					230					235					240
Asp	Asp	Lys	Cys	Lys	Leu	Lys	Phe	Lys	Asp	Phe	Lys	Glu	Lys	Thr	Ile
				245					250					255	
Gly	Arg	Thr	Phe	Glu	Ile	Lys	Leu	Asn	Ile	Gly	Glu	Thr	Leu	Asp	Phe
			260					265					270		
Phe	Ile	Gly	Glu	Ile	Ser	Thr	Asn	Asn	Arg	Asn	Leu	Leu	Ser	Glu	Asn
		275					280						285		
Lys	Glu	Leu	Ile	Ile	Lys	Ile	Phe	His	Ala	Ser	Lys	Phe	Asp	Asn	Leu
	290					295					300				
Arg	Val	Leu	Arg	Gln	Cys	Leu	Asn	Asp	Tyr	His	Arg	Ile	Ala	Met	Ala
305					310					315					320
Leu	Pro	Glu	His	Tyr	His	Lys	Ser	Pro	Lys	Tyr	Lys	Leu	Val	Ile	Thr
				325					330					335	
Ser	Leu	Leu	Ala	Asn	Phe	Val	Ala	Val	Tyr	Cys	Glu	Tyr	Lys	Gly	Gly
			340					345					350		
Asn	Thr	Arg	Ile	Gly	Ser	Leu	Phe	Asn	Ser	Leu	Tyr	Asp	Met	Phe	Pro
		355					360					365			
Asp	Lys	Glu	Lys	Asp	Glu	Glu	Arg	Glu	Lys	Ile	Leu	Ser	Lys	Tyr	Arg
	370					375					380				
Phe	Ile	Glu	Ile	Gly	Lys	Gln	Leu	Asp	Ile	Phe	Asp	Arg	Phe	Ile	Val
385					390					395					400
Asn	Glu	Ile	Val	Cys	Tyr	Leu	Glu	Ser	Gly	Tyr	Phe	Asp	Thr	Thr	Tyr

405 410 415
 Leu Gln Gln Tyr Phe Ala Ala Glu Asp Ala Ser Leu Asn Ser Trp Asp
 420 425 430
 Tyr Leu Tyr Asp Tyr Trp Arg Leu Asp Asn Gly Glu Tyr Glu Lys His
 435 440 445
 Tyr Gly Glu Thr Val Arg Tyr Tyr Phe Ala Asp Glu Ser Val Asp Leu
 450 455 460
 Lys Glu Leu Phe Val Ile Ile Ser Val Leu Ser Val Leu Tyr Ser Asp
 465 470 475 480
 Asn Leu Val His Val Ser Glu Glu Asp Ile Ile Ala Gln Gly Lys His
 485 490 495
 Ser Ile Asp Arg Leu Met Glu Gly Ile Ser Asp Met Glu Gly Leu Leu
 500 505 510
 Asn Cys Asn Ser Lys Val His Ala Gly Thr Arg Arg Asn His Ser Asn
 515 520 525
 Ile Gly Ser Asp Arg Ile Leu Asn Gly Leu Val Ala Tyr Phe Gln Lys
 530 535 540
 Leu Phe Gly Gln Arg Leu Lys Lys Cys Pro Asn Lys Val Ser Val Met
 545 550 555 560
 Leu Glu Asn Leu Thr Asp Glu Thr Cys Glu Arg Leu Asn Pro Ala Leu
 565 570 575
 Asn Asp Val Val Pro Val Lys Gln Arg Leu Tyr Arg Asp Thr Ser Ile
 580 585 590
 Phe Gln Glu Ala Asp Ala Asp Lys Val Ser Lys Ser Ile Leu Gly Leu
 595 600 605
 Ser Asn Glu Ser Arg Asn Thr Phe Leu His Phe Leu Gln Phe Arg Tyr
 610 615 620
 Lys Tyr Thr Ser Trp Gly Ser Glu Ile Glu His Leu Ser Lys Tyr Cys
 625 630 635 640
 Gln Ser Asp Leu Pro Gln Leu Lys Leu Ile Asn Glu Arg Leu Lys Ala
 645 650 655
 Glu Ala Ala Asn Arg Arg Leu Ile Glu Lys Tyr Ser Ile Glu Lys Ile
 660 665 670
 Thr Asn Leu Ile Asp Glu Ile Thr Ala Lys Val Lys
 675 680

<210> 10137

<211> 132

<212> PRT

<213> B.fragilis

<400> 10137

Lys Asn Lys Gly Ala Ala Thr Asp Glu Tyr Leu Gln Gln Leu Ser Arg
 1 5 10 15
 Gln Ile Asp Arg Leu Glu Gly Leu Lys Val Asn His Ser His Ser Phe
 20 25 30
 Asn Val Thr Tyr Ser Arg Ser Tyr Leu Val Gln Val Thr Ile Val Glu
 35 40 45
 Leu Phe Leu Phe Ser Leu Val His Asn Ala Trp Gln Leu Lys Arg Gly
 50 55 60
 Trp Arg Leu Lys Tyr Arg Tyr Val Leu Met Ser Gly Asn Ala Asp Ala
 65 70 75 80
 Lys Thr Leu Asp Arg Leu Glu Asn Cys Phe Glu Trp Asn Arg Asp Arg
 85 90 95
 Lys Leu Ile Trp Lys Ile Arg Lys Glu Val Glu Asp Phe Glu Arg Trp
 100 105 110
 Thr Glu Lys Lys Val Ala Glu Met Leu Arg Ala Lys Arg Gln Gln Pro
 115 120 125
 Gly Val Gly Lys

130

<210> 10138
 <211> 168
 <212> PRT
 <213> B.fragilis

<400> 10138

Ser	Pro	Phe	Phe	Pro	Arg	Ala	Pro	Lys	Gln	Lys	Ile	Asn	Val	Ser	Leu
1				5					10					15	
Leu	Ile	Phe	Cys	Ile	Met	Asn	Thr	Leu	Ser	Phe	Pro	Gln	Ile	Thr	Val
			20					25					30		
Ser	Tyr	Lys	Asp	Ala	Asp	Ala	Ser	Lys	Arg	Val	Arg	Ile	His	Ser	Ser
		35					40					45			
Lys	Glu	Ser	Tyr	Asp	Ile	Leu	Lys	Thr	Phe	Tyr	Glu	Asp	Cys	Met	Gln
	50					55					60				
His	His	Glu	Glu	Cys	Trp	Ala	Met	Tyr	Leu	Asn	Gly	Ala	Gly	Arg	Leu
65					70					75					80
Leu	Gly	Val	Ser	Cys	Val	Ser	Arg	Ser	Gly	Met	Asn	Ser	Thr	Val	Val
				85					90					95	
Asp	Ile	Arg	Ile	Val	Leu	Gln	Thr	Ala	Leu	Val	Ser	His	Ala	Ser	Gly
				100				105					110		
Ile	Ile	Leu	Ser	His	Asn	His	Pro	Ser	Gly	Ser	Thr	Val	Ala	Ser	Thr
			115				120					125			
Pro	Asp	Asn	Asn	Leu	Thr	Ser	Gln	Leu	Lys	Lys	Gly	Cys	Glu	Ala	Ile
	130					135					140				
Gly	Ile	Gln	Leu	Leu	Asp	His	Ile	Ile	Leu	Thr	Glu	Asp	Ala	Tyr	Leu
145					150					155					160
Ser	Tyr	Met	Asp	Glu	Gly	Met	Leu								
				165											

<210> 10139
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 10139

Tyr	Arg	Thr	Met	Leu	Leu	Ala	Ile	Asp	Phe	Thr	Asn	Leu	His	Glu	Ile
1				5					10					15	
Leu	Gln	Val	Leu	Tyr	Gln	Asp	Met	Met	Pro	Leu	Cys	Glu	Lys	Leu	Thr
			20					25					30		
Gly	Val	Ala	Lys	Gly	Ile	Ala	Gly	Leu	Gly	Ala	Leu	Phe	Tyr	Val	Ala
		35					40					45			
Ala	Lys	Val	Trp	Gln	Ala	Leu	Ala	Arg	Ala	Glu	Pro	Ile	Asp	Val	Tyr
	50					55				60					
Pro	Leu	Leu	Arg	Pro	Phe	Ala	Ile	Gly	Leu	Cys	Ile	Leu	Phe	Phe	Pro
65					70					75					80
Thr	Phe	Val	Ile	Gly	Thr	Ile	Asn	Thr	Val	Leu	Ser	Pro	Val	Val	Lys
				85				90						95	
Gly	Cys	His	Gly	Met	Leu	Glu	Ser	Gln	Thr	Phe	Asp	Met	Asn	Arg	Tyr
			100					105					110		
Arg	Glu	Gln	Lys	Glu	Thr	Leu	Glu	Arg	Glu	Ala	Phe	Arg	Arg	Asp	Pro
		115					120					125			
Glu	Lys	Ala	Tyr	Leu	Ala	Ser	Lys	Glu	Asp	Phe	Asp	Lys	Lys	Leu	Asp
	130					135				140					
Glu	Leu	Gly	Trp	Ser	Pro	Lys	Asp	Leu	Lys	Thr	Met	Ala	Val	Met	Tyr
145					150					155					160
Ile	Asp	Arg	Thr	Glu	Tyr	Asn	Met	Lys	Arg	Asn	Ile	Arg	Leu	Trp	Phe
				165					170					175	

Gln Glu Leu Leu Glu Leu Leu Phe Gln Ser Ala Ala Leu Val Ile Asp
 180 185 190
 Thr Ile Arg Thr Phe Phe Leu Ile Ala Leu Ser Ile Leu Gly Pro Ile
 195 200 205
 Ala Phe Ala Leu Ser Val Tyr Asp Gly Phe Gln Ser Thr Leu Thr Gln
 210 215 220
 Trp Ile Thr Arg Tyr Ile Ser Ile Tyr Met Trp Leu Pro Val Ser Asp
 225 230 235 240
 Leu Phe Ser Ser Val Leu Ala Arg Ile Gln Val Leu Met Leu Thr Arg
 245 250 255
 Asp Ile Glu Ala Met Ser Asp Pro Thr Phe Ile Pro Asp Ser Ser Asn
 260 265 270
 Thr Val Tyr Ile Ile Phe Leu Ile Ile Gly Ile Phe Gly Tyr Phe Thr
 275 280 285
 Ile Pro Thr Val Ala Asn Trp Ile Ile Met Ala Gly Gly Val Ser Gln
 290 295 300
 Ala Asn Arg Ala Met Asn Gln Thr Ala Asn Lys Val Gly Asn Val Ala
 305 310 315 320
 Ala Ala Gly Ala Gly Ala Ala Val Gly Asn Ile Ala Gly Lys Ile Ile
 325 330 335
 Lys

<210> 10140
 <211> 442
 <212> PRT
 <213> B.fragilis

<400> 10140
 Leu Thr Thr Phe Arg Asn Glu Asn Phe Arg Val Met Lys Thr Lys Arg
 1 5 10 15
 Ser Thr Phe Ala Thr Ser Phe Tyr Ile Lys Arg Ser Ala Val Arg Asn
 20 25 30
 Arg Asp Gly Lys Ala Pro Ile Met Val Lys Ile Ser Ile Asp Gly Asp
 35 40 45
 Asp Lys Val Leu Gly Thr Lys Leu Phe Val Thr Pro Asp Leu Trp Glu
 50 55 60
 Asn Gly Lys Ala Lys Gly Lys Ser Ala Glu Ala Thr Glu Ile Asn Gly
 65 70 75 80
 Gln Leu Lys Glu Val Ser Ala Arg Leu Thr Asn His Tyr His Arg Ile
 85 90 95
 Leu Arg Glu Glu Asp Phe Val Thr Ala Glu Lys Leu Arg Asn Ala Phe
 100 105 110
 Leu Gly Ile Gly Val Met Glu Asn Cys Ile Leu Lys Asp Phe Glu Asn
 115 120 125
 Met Asn Arg Glu Phe Glu Ala Met Val Glu Lys Gly Gln Arg Ala Lys
 130 135 140
 Ser Thr Tyr Asn Lys Tyr Leu Ala Val Tyr Asn His Phe Ala Thr Phe
 145 150 155 160
 Leu Trp Glu Lys Lys Lys Arg Thr Asp Met Ala Tyr Lys Glu Leu Thr
 165 170 175
 Lys Glu Ile Ile Thr Asp Phe Asp Lys Tyr Leu Arg Val Glu Lys Gly
 180 185 190
 Leu Ser Asp Asn Thr Leu Trp Ile Tyr Thr Met Pro Leu Leu Ser Leu
 195 200 205
 Thr Asp Lys Ala Trp Arg Arg Gly Ile Val Arg Ser Asp Pro Phe Gly
 210 215 220
 Glu Tyr Ser Leu Glu Met Gln Glu Thr Asp Arg Gly Tyr Leu Thr Glu
 225 230 235 240

Glu Glu Leu Arg Thr Leu Ala Asn Ala Val Phe Val Lys Lys Gln Thr
 245 250 255
 Asn Leu Val Arg Asp Met Phe Leu Phe Gly Cys Phe Thr Gly Leu Ser
 260 265 270
 Tyr Ile Asp Ile Lys Thr Leu Thr His Asp Lys Ile Gln Arg Met Asp
 275 280 285
 Phe Asp Gly Glu Asp Trp Ile Ile Thr Arg Arg Thr Lys Thr Arg Val
 290 295 300
 Ser Ser Asn Val Pro Leu Met Glu Ile Ala Lys Glu Leu Ile Glu Arg
 305 310 315 320
 Tyr Lys Gly Leu Ala Gly Gly Asp Phe Val Phe Pro Met Pro Ser Asn
 325 330 335
 Gly Thr Cys Asn Lys His Leu Lys Gln Ile Ala Lys Ala Cys Gly Ile
 340 345 350
 Ser Lys Glu Ile Gly Phe His Leu Ser Arg His Thr Phe Ala Thr Thr
 355 360 365
 Val Tyr Leu Cys Asn Gly Gly Thr Ile Glu Ala Leu Ser Lys Ile Leu
 370 375 380
 Gly His Lys His Ile Ser Thr Thr Gln Ile Tyr Ala Glu Val Thr Asn
 385 390 395 400
 Lys Met Val Ser Ser Asp Phe Arg Ala Ile Ser Gly Asn Leu Ala Ala
 405 410 415
 Met Gln Arg Ser Val Leu Glu Lys Arg Asp Arg Lys Gln Gly Arg Lys
 420 425 430
 Lys Val His Arg Ser Leu Arg Glu Thr Ala
 435 440

<210> 10141
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 10141
 Ile Phe Asp Leu Met Glu Glu Gln Thr Gln Glu Lys Ala Thr Ala Asn
 1 5 10 15
 Ala Ala Arg Asp Gly Gly Gly Cys Pro Asn Pro Gly Asp Gly Glu Arg
 20 25 30
 Lys Glu Gly Gly Gln Gly Arg Arg Glu Lys Gly Glu Glu Asp Ser Gln
 35 40 45
 Ala Ala His Ala Glu Thr Val Ala Ala Thr Glu Glu Ala Asp Gly Ile
 50 55 60
 Ser Ala Asp Gly Leu Ala Val Pro Arg Leu Asp Val Ala Asp Ile Arg
 65 70 75 80
 Thr Phe Gly Gly Ala Gly Arg Glu Pro Gly His Arg Gly Gly Val Gln
 85 90 95
 Arg Arg His Pro Pro Ala Gly Glu
 100

<210> 10142
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 10142
 Ile His Ile Phe Ala Gly Lys Tyr Asn Glu Lys Cys Ile Arg Thr Met
 1 5 10 15
 Glu Ile Val Ser Ile Glu Lys Lys Thr Phe Glu Glu Met Lys Glu Arg
 20 25 30
 Phe Gly Cys Phe Ser Arg His Val Lys Glu Leu Cys Ala Arg Tyr Arg

[illegible]

<400>	10143														
Arg	Ile	Val	Pro	Met	Lys	Leu	Lys	Tyr	Cys	Ile	Leu	Ser	Leu	Leu	Phe
1				5					10					15	
Phe	Tyr	Leu	Asn	Ile	Ser	Ser	Ile	Gln	Ala	Val	Ile	Pro	Gln	Met	Glu
			20					25					30		
Val	Ser	Pro	Asp	Glu	Arg	Gly	Val	Ser	Ser	Leu	Val	Phe	Gln	Gly	Ala
		35					40					45			
Gly	Asn	Val	Arg	Asn	Tyr	Val	Asp	His	Gly	Lys	Tyr	Leu	Gly	Asp	Leu
	50					55					60				
Ser	Leu	Ile	Tyr	Glu	Val	Arg	Gly	Lys	Ser	Tyr	Ala	Val	Ser	Leu	Ala
65					70					75					80
Asp	Ile	Thr	Pro	Leu	Val	Leu	Ser	Asn	Thr	Pro	Asp	Lys	Ile	Gln	Ile
				85					90					95	
Phe	Trp	Gln	Leu	Pro	Phe	Asp	Val	Arg	Leu	Tyr	Gln	Thr	Phe	Thr	Ile
			100					105					110		
Lys	Gly	Glu	Glu	Val	Asp	Trp	Glu	Ile	Asp	Phe	Phe	Asn	Arg	Ser	His
		115					120					125			
His	Pro	Val	Lys	Val	Thr	Asp	Met	Trp	Phe	Ala	Leu	Pro	Val	Gly	Ala
	130					135					140				
Leu	Asp	Glu	Ser	Ile	Gln	Ala	His	Gln	Asn	Leu	Asn	Arg	His	Phe	Ser
145				150						155					160
Leu	Asn	Gly	Asn	Ala	Ser	Phe	Phe	Tyr	Trp	Thr	Pro	Leu	Thr	Gly	Gln
			165					170						175	
Gly	Asp	Ile	Leu	Leu	Met	Thr	Met	His	Lys	Gly	Thr	Ala	Ile	Glu	Tyr
			180					185					190		
Ala	Thr	Gln	Asp	Gly	Lys	Tyr	Tyr	Leu	His	Ser	Met	Asn	Ala	Val	Asp
		195					200					205			
Arg	Thr	Asn	Asp	Ser	Trp	Arg	Leu	Pro	Ser	Thr	Ser	Lys	Asn	Val	Gln
	210				215						220				
Pro	Tyr	Glu	His	Tyr	Met	Thr	Gly	Phe	Asn	Phe	Thr	Leu	Thr	Gly	Asn
225				230						235					240
His	Glu	Glu	Val	Lys	Thr	Lys	Ile	Tyr	Asp	Lys	His	Gly	Val	Val	Val
			245						250					255	
Lys	Val	Ala	Pro	Gly	Met	Val	Val	Thr	Pro	Glu	Phe	Glu	Val	Tyr	Cys
		260						265					270		
Ala	Leu	Gln	Ser	Lys	Leu	Pro	Val	Ala	Glu	Leu	Val	Ala	Glu	Tyr	Pro
		275					280					285			
Glu	Glu	Ile	Gln	Ile	Thr	Ser	Leu	Gly	Gln	Lys	Glu	Gly	Asp	Lys	Tyr
	290				295						300				
Ile	Tyr	Lys	Phe	Arg	Phe	Ser	Arg	Leu	Gly	Glu	Asn	Leu	Ile	Thr	Val
305				310						315					320
His	Tyr	Gly	Asp	Asp	Leu	Ile	Trp	Leu	Ser	Arg	Phe	Leu	Leu		
			325						330						

<210> 10144
 <211> 309
 <212> PRT
 <213> B.fragilis

<400> 10144

Arg	His	Asn	Ile	Gln	Leu	Val	Pro	Tyr	Lys	Lys	Gly	Asp	Phe	Pro	Glu
1			5						10					15	
Ala	Leu	Met	Glu	Met	Ser	Tyr	Ile	Gly	Thr	Asn	Gln	Leu	Lys	Phe	Thr
		20						25					30		
Val	Thr	Asp	Arg	Arg	Ile	Pro	Ser	Gly	Ile	Arg	Met	Lys	Pro	Asn	Ile
		35					40					45			
His	Ile	Phe	Gly	Gly	Leu	Ala	Asn	Gln	Pro	Gly	Asn	Thr	Ile	Ile	Glu
	50					55					60				
Ser	Arg	Phe	Val	Ala	Cys	Asp	Ala	Asp	Arg	Ala	Ile	Arg	Lys	Tyr	Ser
65					70					75				80	
Asn	Asp	Ala	Trp	Val	Ala	Ala	Tyr	Phe	Gly	Leu	His	Thr	Glu	Gln	Leu
			85						90					95	
Glu	Asp	Phe	Gln	Gly	Tyr	Ser	Ala	Gly	Tyr	Lys	Tyr	Tyr	Thr	Phe	Gln
		100						105					110		
Asp	Glu	Arg	Ser	Tyr	Gly	Ala	Phe	Gln	Thr	Asn	Asp	Pro	Leu	Ser	Arg
		115					120					125			
Arg	Pro	Thr	Glu	Gly	Phe	Tyr	Lys	Leu	Gly	Asp	Met	Tyr	Asn	Arg	Asp
	130					135					140				
Thr	Tyr	Leu	Gln	Pro	Phe	Leu	Asp	His	Gly	Glu	Lys	Ile	Ile	Leu	Arg
145					150					155					160
Gln	Val	Asp	Met	Tyr	Val	Asn	Gly	Arg	Ser	Thr	Phe	Val	Ala	Ala	Asp
			165						170					175	
Asp	Ser	Pro	Tyr	Lys	Tyr	Asp	Leu	Asp	Gly	Asp	Gly	Val	Leu	Glu	Ser
		180					185					190			
Tyr	Glu	Cys	Glu	Leu	Asp	Pro	Ala	Thr	Gly	Leu	Pro	Val	His	Glu	Ala
	195					200					205				
Asp	Tyr	Thr	Lys	Tyr	Lys	Gly	Phe	Gln	Gly	Asp	Val	Tyr	Leu	Ser	Phe
	210					215					220				
Ile	Glu	Met	Gly	Thr	Asp	Glu	Tyr	Glu	Pro	Trp	Asn	Thr	Gly	Val	Ser
225					230					235					240
Leu	Gly	Ser	Val	Tyr	Thr	Thr	Gly	Gly	Ile	Gln	Lys	Thr	Tyr	Lys	Tyr
			245						250					255	
Ile	Tyr	Thr	Gly	Ala	Gly	Asp	Phe	Thr	Ile	Thr	Ala	Val	Ala	Thr	Asn
		260					265					270			
Val	Gly	Asp	Lys	Asp	Tyr	Lys	Gly	Ile	Asp	Tyr	Ser	Glu	Glu	Arg	Ser
	275						280					285			
Asn	Ser	Leu	Asp	Asp	Tyr	Ser	His	Lys	Arg	Ala	Leu	Ser	Ser	Val	Lys
	290					295					300				
Val	Ser	Val	Lys	Pro											
305															

<210> 10145
 <211> 174
 <212> PRT
 <213> B.fragilis

<400> 10145

Glu	Ala	Val	Phe	Ser	Ile	Pro	Val	Asp	Thr	Thr	Phe	Met	Arg	Leu	Arg
1			5						10					15	
Gln	Trp	Glu	Trp	Tyr	Cys	Gln	Lys	Arg	Ala	Asp	Ser	Cys	Leu	Thr	Glu
		20						25					30		
Asn	Asn	Tyr	Gln	Gly	Ala	Leu	Ser	Trp	Leu	Asp	Ser	Ala	Arg	Ile	Gln
		35					40					45			

Val	Glu	His	Tyr	Gly	Arg	Pro	Tyr	Tyr	Ile	Leu	Ala	Arg	Gly	Asp	Val
50						55					60				
Tyr	Tyr	Ser	Ile	His	Gln	Tyr	Asp	Ser	Ala	Arg	Arg	Tyr	Phe	Ser	Met
65					70					75					80
Ala	Val	His	Ser	Ile	His	Pro	His	Ile	Ala	Ile	Glu	Ala	Trp	Arg	Lys
				85					90					95	
Leu	Ala	Glu	Leu	Glu	Leu	Met	Glu	Gly	Asn	Glu	Lys	Gln	Gly	Phe	Tyr
			100					105					110		
Ser	Thr	Gln	Lys	Ala	Asp	Ala	Leu	Phe	Arg	Val	Glu	Ile	Gly	His	Val
		115					120					125			
Gln	Ser	Asp	Asn	Ser	Glu	Ala	Leu	Tyr	Gln	Glu	Glu	Arg	Leu	Lys	Asn
		130				135					140				
Glu	Leu	Asn	Gln	Leu	Lys	Ile	Ala	Lys	Gln	Asn	Arg	Glu	Ile	Ala	Met
145					150					155					160
Ser	Ser	Pro	Arg	Gly	Trp	Lys	Asp	Pro	Arg	Trp	Arg	Ser	Pro		
				165					170						

<210> 10146

<211> 425

<212> PRT

<213> B.fragilis

<400> 10146

Ala	Leu	Phe	Phe	His	Tyr	Tyr	Thr	Lys	Tyr	Met	Leu	Phe	Ile	Pro	Arg
1				5					10					15	
Lys	Ile	Val	Ser	Phe	Ala	Lys	Glu	Thr	Lys	Thr	Pro	Asn	Thr	Met	Tyr
			20					25					30		
Gly	Lys	Met	Lys	Glu	His	Leu	Ser	Asn	Thr	Ile	Ala	Glu	Ile	Lys	Glu
		35					40					45			
Ala	Gly	Leu	Tyr	Lys	Glu	Glu	Arg	Leu	Ile	Glu	Ser	Ala	Gln	Gln	Ala
		50				55					60				
Ala	Ile	Thr	Val	Lys	Gly	Lys	Glu	Val	Leu	Asn	Phe	Cys	Ala	Asn	Asn
65					70					75					80
Tyr	Leu	Gly	Leu	Ser	Asn	His	Pro	Arg	Leu	Ile	Glu	Gly	Ala	Lys	Lys
				85					90					95	
Met	Met	Asp	Arg	Arg	Gly	Tyr	Gly	Met	Ser	Ser	Val	Arg	Phe	Ile	Cys
		100						105					110		
Gly	Thr	Gln	Asp	Ile	His	Lys	Glu	Leu	Glu	Ala	Ala	Ile	Ser	Asp	Tyr
		115					120					125			
Phe	Lys	Thr	Glu	Asp	Thr	Ile	Leu	Tyr	Ala	Ala	Cys	Phe	Asp	Ala	Asn
		130				135					140				
Gly	Gly	Val	Phe	Glu	Pro	Leu	Phe	Thr	Asp	Glu	Asp	Ala	Ile	Ile	Ser
145					150					155					160
Asp	Ser	Leu	Asn	His	Ala	Ser	Ile	Ile	Asp	Gly	Val	Arg	Leu	Cys	Lys
				165					170					175	
Ala	Lys	Arg	Tyr	Arg	Tyr	Ala	Asn	Ala	Asp	Met	Ala	Asp	Leu	Glu	Arg
			180					185					190		
Cys	Leu	Gln	Glu	Ala	Gln	Ala	Gln	Arg	Phe	Arg	Ile	Ile	Val	Thr	Asp
		195					200					205			
Gly	Val	Phe	Ser	Met	Asp	Gly	Asn	Val	Ala	Pro	Met	Asp	Lys	Ile	Cys
		210				215					220				
Asp	Leu	Ala	Glu	Lys	Tyr	Asp	Ala	Leu	Val	Met	Val	Asp	Glu	Ser	His
225					230					235					240
Ser	Ala	Gly	Val	Val	Gly	Ala	Thr	Gly	His	Gly	Val	Ser	Glu	Gln	Tyr
				245					250					255	
Asn	Thr	Tyr	Gly	Arg	Val	Asp	Ile	Tyr	Thr	Gly	Thr	Leu	Gly	Lys	Ala
			260					265					270		
Phe	Gly	Gly	Ala	Leu	Gly	Gly	Phe	Thr	Thr	Gly	Arg	Lys	Glu	Ile	Ile
		275					280								

Asp Leu Leu Arg Gln Arg Ser Arg Pro Tyr Leu Phe Ser Asn Ser Leu
 290 295 300
 Ala Pro Gly Ile Ile Gly Ala Ser Leu Glu Val Phe Lys Met Leu Lys
 305 310 315 320
 Glu Ser Asn Glu Ile His Asp Lys Leu Val Asp Asn Val Asn Tyr Phe
 325 330 335
 Arg Asp Lys Met Thr Ala Ala Gly Phe Asp Ile Lys Pro Thr Gln Ser
 340 345 350
 Ala Ile Cys Ala Val Met Leu Tyr Asp Ala Lys Leu Ser Gln Ile Tyr
 355 360 365
 Ala Ala Arg Met Gln Glu Glu Gly Ile Tyr Val Thr Gly Phe Tyr Tyr
 370 375 380
 Pro Val Val Pro Lys Asp Gln Ala Arg Ile Arg Val Gln Ile Ser Ala
 385 390 395 400
 Gly His Glu Lys Glu His Leu Asp Lys Cys Ile Ala Ala Phe Ile Lys
 405 410 415
 Val Gly Lys Glu Leu Gly Val Leu Lys
 420 425

<210> 10147

<211> 244

<212> PRT

<213> B.fragilis

<400> 10147

Lys Ser Phe Glu Asn Arg Leu Ala Cys Gly Asp Ile Asp Thr Leu Leu
 1 5 10 15
 Ile Ile Lys Met Lys Thr Ile Met Ala Gly Val Thr Val Leu Val Leu
 20 25 30
 Phe Ala Ser Cys Gly Asn Ser Asn Lys Thr Asp Ala Asp Pro Phe Ala
 35 40 45
 Ser Ile Thr His Leu Val Asp Ser Ala Met Val Asn Lys Thr Asp Ser
 50 55 60
 Ile Asp Arg Glu Lys Thr Ser Asp Glu Pro Lys Pro Ile Glu Ala Asp
 65 70 75 80
 Glu Ser Phe Asp Asp Phe Ile Tyr Asn Phe Ala Ser Asp Asp Ala Leu
 85 90 95
 Gln Arg Gln Arg Val Val Phe Pro Leu Pro Tyr Tyr Asn Gly Glu Arg
 100 105 110
 Ala Leu Lys Ile Asp Arg Lys Tyr Trp Lys His Asp Asp Leu Phe Ala
 115 120 125
 Lys Gln Ser Tyr Tyr Thr Leu Leu Phe Asp Arg Glu Glu Asp Met Asp
 130 135 140
 Leu Val Gly Asp Thr Ser Leu Thr Ser Val Gln Val Glu Trp Ile Phe
 145 150 155 160
 Val Lys Lys Arg Met Val Lys Lys Tyr Tyr Phe Glu Arg Ile Lys Gly
 165 170 175
 Ala Trp Met Leu Glu Ala Ile Asn Leu Arg Pro Ile Glu Glu Asn Glu
 180 185 190
 Asn Glu Asp Phe Val Glu Phe Phe Gly His Phe Ala Thr Asp Ser Ile
 195 200 205
 Leu Gln Ser Arg Arg Ile Arg Gln Pro Leu Val Phe Val Thr Thr Asp
 210 215 220
 Pro Asp Asp Asp Phe Ser Leu Leu Glu Thr Thr Leu Asp Leu Asn Gln
 225 230 235 240
 Trp Phe Cys Leu

<210> 10148

<211> 349
 <212> PRT
 <213> B.fragilis

<400> 10148

Cys Met Lys Arg Met Ile Val Tyr Lys Ser Cys Ser Tyr Val Ile Met
 1 5 10 15
 Ala Leu Leu Cys Thr Ala Cys Ala Ala Gly Ser Pro Glu Glu Asp Met
 20 25 30
 Glu Asp Arg Val Arg Ile Asp Pro Val Ala Gly Gly Tyr Tyr Pro Ser
 35 40 45
 Ile Ser Pro Ser Ala Gln Thr Arg Gly Ala Thr Pro Asp Gly Glu Thr
 50 55 60
 Leu Lys Asp Arg Pro Ile Phe Leu Leu Glu Asp Gly Ser Thr Ile Arg
 65 70 75 80
 Leu Val Val Tyr Asp Asp Ala Lys Asn Leu Leu Glu Glu Tyr Ser Lys
 85 90 95
 Ala Tyr Leu Val Arg Asn Ala Gly Thr Ser Gly Ser Ser Leu Leu Tyr
 100 105 110
 Pro Cys Glu Val Asp Asp Asn Gly Ala Val Ile Ser Ser Ser Ser Thr
 115 120 125
 Pro Leu Tyr Met Lys Ala Gly Thr Tyr Tyr Phe Arg Ile Leu Ser Pro
 130 135 140
 Ala Lys Ala Leu Asn Ser Lys Gly Phe Val Asn Ile Gly Asn Gly Glu
 145 150 155 160
 Tyr Leu Leu Ala Thr Asp Asp Arg Tyr Thr Gln Thr Ala Met Thr Ala
 165 170 175
 Val Thr Ile Thr Lys Ile Asp Glu Gly Gly Thr Leu Asn Asn Val Gln
 180 185 190
 Thr Leu Tyr Leu Pro Pro Ile Ile Asn Gln Thr Ala Arg Met Gln Phe
 195 200 205
 Thr Val Arg Ala Gly Glu Gly Val His Thr Leu Glu Met Leu Ala Glu
 210 215 220
 Gly Ile Glu Ile Ser Gly Ile Gln Gln Pro Leu Asp Asn Thr Thr Ser
 225 230 235 240
 Phe Asp Trp Val Asn Gly Asp Val Leu Pro Val Lys Val Gly Asp Gln
 245 250 255
 Ser Ala Ser Val Arg Ile Thr Gln Ala Thr Arg Asn Ala Asp Asn Ser
 260 265 270
 Leu Val Ala His Thr Gly Val Leu Pro Thr Asp Ala Arg Ser His Ser
 275 280 285
 Ile Ser Val Leu Leu Asn Leu Lys Val Asn Gly Asn Pro Thr Gln Tyr
 290 295 300
 Gln Met Leu Leu Thr Gly Leu Tyr Leu Thr Ala Gly Arg Ser Tyr Asn
 305 310 315 320
 Tyr Thr Ala Thr Val Lys Ile Ser Asn Gly Val Thr Val Leu Thr Trp
 325 330 335
 Gln Asn Arg Ser Trp Thr Glu Asn Val Val Met Asp Lys
 340 345

<210> 10149
 <211> 139
 <212> PRT
 <213> B.fragilis

<400> 10149

Lys Asn Thr Ile Thr Met Glu Glu Leu Thr Leu Thr Thr Pro Ala Leu
 1 5 10 15
 Leu Phe Ser Ala Val Ser Leu Ile Leu Leu Ala Tyr Thr Asn Arg Phe

	20		25		30										
Leu	Ser	Tyr	Ala	Gln	Leu	Val	Arg	Ile	Leu	Arg	Asp	Arg	Tyr	Met	Glu
	35						40					45			
Asp	Pro	Ser	Asp	Ile	Asn	Val	Ala	Gln	Ile	Glu	Asn	Leu	Arg	Lys	Arg
	50					55					60				
Leu	Asn	Leu	Thr	Arg	Met	Met	Gln	Val	Phe	Gly	Ile	Ala	Ser	Leu	Phe
65					70					75					80
Phe	Cys	Val	Val	Thr	Met	Phe	Leu	Ile	Tyr	Ile	Gly	Leu	Leu	Leu	Leu
			85						90					95	
Ser	Ile	Tyr	Ile	Phe	Gly	Leu	Ala	Leu	Leu	Leu	Ile	Ala	Ser	Leu	
			100					105						110	
Gly	Val	Ser	Leu	Arg	Glu	Ile	Gln	Ile	Ser	Thr	Arg	Ala	Leu	Asp	Ile
		115					120					125			
Tyr	Leu	Ser	Thr	Met	Glu	Gly	Lys	Leu	Lys	His					
	130					135									

<210> 10150

<211> 309

<212> PRT

<213> B.fragilis

<400> 10150

Asn	Lys	Gln	Ile	Arg	Val	Met	Asn	Asn	Asn	Asp	Pro	Met	Lys	Arg	Phe
1			5						10					15	
Gly	Tyr	Ile	Val	Phe	Ser	Ile	Cys	Leu	Phe	Ala	Leu	Ser	Ala	Cys	Thr
			20					25					30		
Ser	His	Glu	Gln	Met	Asp	Gln	Glu	Glu	Gly	Ile	Val	Lys	Val	Ser	Met
		35					40					45			
Gly	Leu	Thr	Ala	Ala	Ser	Phe	Thr	Asp	Asp	Asp	Ala	Thr	Thr	Arg	Ala
	50					55				60					
Glu	Gln	Pro	Met	Ala	Pro	Asp	Tyr	Glu	Asn	Leu	Ile	Ser	Asn	Leu	Trp
65					70					75					80
Ile	Leu	Gln	Phe	Asp	Arg	Glu	Gly	Ile	Leu	Thr	Gly	Ser	Glu	His	Lys
			85					90						95	
Val	Leu	Pro	Thr	Pro	Val	Leu	Asn	Thr	Thr	Leu	Glu	Gly	Ile	Ala	Leu
			100					105						110	
Arg	Thr	Gly	Arg	Gly	Thr	Val	Cys	Val	Val	Gly	Asn	Leu	Ala	Asp	Gly
		115					120					125			
Glu	Ile	Ala	Ala	Trp	Pro	Asp	Asn	Leu	Ser	Gly	Phe	Lys	Ser	Leu	Val
	130					135				140					
Val	Asp	Met	Gly	Trp	Leu	Lys	Glu	Arg	Asn	Thr	Asp	Arg	Asn	Val	Cys
145					150					155					160
Leu	Phe	Gly	Tyr	Tyr	Glu	Gly	Glu	Ile	Ala	Ala	Gly	Thr	Thr	Ala	Val
			165					170						175	
Asn	Val	Val	Leu	Gly	Arg	Leu	Val	Cys	Arg	Leu	Asn	Ile	Ala	Val	Ser
			180					185					190		
Ala	Lys	Thr	Ala	Gly	Ile	Phe	Ser	Asn	Val	Arg	Ile	Gln	Leu	Gln	Asn
		195					200					205			
Ala	Gln	Thr	Lys	Gly	Tyr	Leu	Phe	Pro	Ser	Asp	Val	Tyr	Leu	Ser	Pro
	210					215					220				
Glu	Gly	Gly	Gly	Asn	Tyr	Thr	Glu	Glu	Val	Val	Ile	Gly	Ala	Asp	Lys
225					230					235					240
Val	Leu	Gly	Thr	Ala	Pro	Leu	Tyr	Arg	Tyr	Tyr	Tyr	Met	Ala	Glu	Asn
			245					250						255	
Val	Thr	Glu	Gly	Thr	Asp	Ser	Gly	Glu	Arg	Thr	Arg	Leu	Gln	Ile	Lys
		260					265						270		
Ala	Lys	Lys	Gly	Gly	Ala	Glu	Tyr	Thr	Lys	Ala	Ile	Asp	Leu	Gly	Arg
		275					280					285			
Ser	Asp	Ile	His	Asp	Tyr	Ser	Leu	Arg	Arg	Asn	Asn	Asn	Tyr	Thr	Phe

290
Asn Ile Val Leu Glu
305

300

<210> 10151
<211> 68
<212> PRT
<213> B.fragilis

<400> 10151
Asn Cys Gly Phe Gln Leu Leu Met Tyr Ile Leu Ser Ser Ala Asp Glu
1 5 10 15
Thr Tyr Arg Arg His Thr Val Ser Thr Thr Val His His Leu Leu Cys
20 25 30
Thr Phe Asp Gln Ala Gly Met Val Arg Gln Ser Lys Val Val Val Gly
35 40 45
Thr Glu Ile Gln His Phe Phe Ala Phe Asn Gly Asp Ser Ser Leu Leu
50 55 60
Cys Thr Phe Asp
65

<210> 10152
<211> 324
<212> PRT
<213> B.fragilis

<400> 10152
Tyr Thr Leu Leu Val Lys Ile Met Lys Asn Ile Leu Val Ile Gly Ala
1 5 10 15
Thr Gly Gln Ile Gly Ser Glu Leu Thr Met Glu Leu Arg Lys Arg Tyr
20 25 30
Gly Asn Thr His Val Val Ala Gly Tyr Ile His Gly Ala Glu Pro Lys
35 40 45
Gly Glu Leu Lys Glu Ser Gly Pro Ser Ala Val Val Asp Val Thr Asp
50 55 60
Gln Asp Met Ile Ala Ser Val Val Arg Glu Tyr Asn Ile Asp Thr Ile
65 70 75 80
Tyr Asn Leu Ala Ala Leu Leu Ser Val Val Ala Glu Ser Lys Pro Lys
85 90 95
Leu Ala Trp Lys Ile Gly Ile Asp Gly Leu Trp Asn Val Leu Glu Val
100 105 110
Ala Arg Glu Asn Lys Cys Ala Val Phe Thr Pro Ser Ser Ile Gly Ser
115 120 125
Phe Gly Glu Ser Thr Pro His Val Gln Thr Pro Gln Asp Thr Ile Gln
130 135 140
Arg Pro Arg Thr Met Tyr Gly Ile Ser Lys Val Thr Thr Glu Leu Leu
145 150 155 160
Ser Asp Tyr Tyr Phe Asn Lys Tyr Gly Val Asp Thr Arg Ala Val Arg
165 170 175
Phe Pro Gly Ile Ile Ser Asn Val Thr Pro Pro Gly Gly Gly Thr Thr
180 185 190
Asp Tyr Ala Val Asp Ile Tyr Tyr Ser Ala Val Lys Gly Glu Lys Phe
195 200 205
Ile Cys Pro Ile Pro Glu Gly Thr Leu Met Asp Met Met Tyr Met Pro
210 215 220
Asp Ala Leu Asn Ala Ala Ile Ser Leu Met Glu Ala Asp Pro Thr Lys
225 230 235 240
Leu Val His Arg Asn Ala Phe Asn Ile Ala Ser Met Ser Phe Ala Pro
245 250 255

Glu Thr Ile Tyr Ala Ala Ile Lys Lys His Val Pro Asp Phe Glu Met
 260 265 270
 Glu Tyr Lys Val Asp Pro Leu Lys Gln Arg Ile Ala Asn Ser Trp Pro
 275 280 285
 Asp Ser Met Asp Asp Ser Cys Ala Arg Glu Glu Trp Gly Trp Lys Pro
 290 295 300
 Ala Tyr Asp Leu Glu Ser Met Thr Val Asp Met Leu Glu Lys Leu Arg
 305 310 315 320
 Ala Lys Leu Lys

<210> 10153
 <211> 589
 <212> PRT
 <213> B.fragilis

<400> 10153

Ala Glu Glu Ser Cys Ser Ala Leu Met Phe His Ser Lys Lys Ser Arg
 1 5 10 15
 His Ile Met Lys Ile Lys His Ile Val Ser Cys Phe Phe Val Ser Leu
 20 25 30
 Ile Gly Leu Ser Ala Cys Ser Ile Glu Glu Leu Pro Tyr Asn Gln Leu
 35 40 45
 Thr Glu Asp Glu Leu Asp Gly Ser Tyr Glu Ser Leu Leu Ser Ala Thr
 50 55 60
 Arg Gly Asn Tyr Ala Val Phe Lys Gln Thr Ala Phe His Gln Gly Trp
 65 70 75 80
 His Tyr Ala Gly Glu Leu Ala Ser Asp Asn Val Ser Leu Ser Gly Val
 85 90 95
 Ser Ser Asp Ala Leu Met Tyr Ile Tyr Asn Tyr Gln Arg Ile Thr Asp
 100 105 110
 Asn Tyr His Met Ser Asn Met Trp Gly Trp Ala Tyr Arg Ser Ile Ile
 115 120 125
 Asn Ser Asn Lys Ile Leu Glu Lys Ala Gln Glu Gly Glu Ser Lys Glu
 130 135 140
 Met Asp Gln Leu Ile Gly Glu Asn Tyr Phe Leu Arg Gly Trp Leu Glu
 145 150 155 160
 Phe Val Leu Val Asn Val Phe Gly Arg Pro Tyr Asn Gln Ser Pro Glu
 165 170 175
 Thr Asn Leu Gly Ile Pro Leu Lys Leu Thr Ala Asp Ile Asn Asp Tyr
 180 185 190
 Pro Met Arg Ser Thr Val Lys Glu Ser Tyr Glu Gln Ile Leu Lys Asp
 195 200 205
 Leu Lys Lys Ala Glu Thr Leu Leu Asn Ser Glu Ser Asn Ile Tyr Ala
 210 215 220
 Gly Pro Ser Ala Ala Lys Ala Leu Leu Ser Arg Val Tyr Leu Tyr Met
 225 230 235 240
 Gly Asn Asn Lys Leu Ala Ala Glu Tyr Ala Thr Glu Val Ile Glu Ser
 245 250 255
 Ser Gly Arg Thr Leu Leu Glu Gly Glu Ala Tyr Ala Thr Ala Asn Val
 260 265 270
 Leu Val Pro Glu Asp Asn Pro Glu Ile Ile Phe Ala Ile Arg Cys Thr
 275 280 285
 Lys Asp Lys Asp Asp Tyr Gly Trp Asn Ser Ile Gly Gly Phe Tyr Ala
 290 295 300
 Asn Ile Asp Gly Val Gly Trp Gly Glu Leu Tyr Ala Ser Glu Pro Leu
 305 310 315 320
 Arg Asp Ala Tyr Ala Glu Tyr Pro Glu Asp Leu Arg Ser Arg Tyr Ile
 325 330 335

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Val Pro Gln Tyr Leu Lys Asp Asp Glu Thr Gly Glu Tyr Arg Lys Glu
 340 345 350
 Phe Ile Tyr Ile Glu Ser Ser Glu Glu Asp Gly Val Pro Arg Lys Tyr
 355 360 365
 Tyr Arg Trp Asn Glu Ile Ile Glu Glu Asn Gly Asn Tyr Arg Ile Lys
 370 375 380
 Asp Ala Tyr Leu Ser Lys Tyr Glu Tyr Lys Asp Thr Leu Thr Met Lys
 385 390 395 400
 Gln Asp Ala Gly Gly Tyr Tyr Val Glu Ser Arg Leu Lys Ser Gly Lys
 405 410 415
 Asp Asn Pro Thr Pro Gly Thr Tyr Glu Lys His Tyr Val Thr Ile Gln
 420 425 430
 Asn Leu Met Ala Lys Arg Asn Asp Tyr Pro Lys Tyr Tyr Val Tyr Lys
 435 440 445
 Cys Ser Lys Gln Glu Asn Gln Pro Gln Leu Trp Ser Pro Thr Val Leu
 450 455 460
 Arg Leu Gly Glu Met Tyr Leu Asn Arg Ala Glu Ala Tyr Ala Lys Glu
 465 470 475 480
 Pro Ala Leu Gly Asp Ala Leu Ala Asp Leu Asn Val Ile Arg Thr Arg
 485 490 495
 Ala His Ile Pro Ala Leu Ser Ala Gly Asp Met Lys Pro Gly Lys Thr
 500 505 510
 Met Leu Glu Tyr Val Leu Glu Glu Arg Arg Lys Glu Leu Ala Phe Glu
 515 520 525
 Gly His Arg Arg Phe Asp Ile Phe Arg Asn Gly Leu Thr Met Asn Arg
 530 535 540
 Thr Tyr Pro Gly Thr His Asp Arg Gly Ala Ala Thr Ser Val Arg Leu
 545 550 555 560
 Thr Ile Ser Ala Asp Asp Pro Ala Ala Ile Glu Phe Ile Pro Gln Arg
 565 570 575
 Glu Ile Asp Ser Tyr Pro Gly Val Leu Glu Gln Asn Pro
 580 585

<210> 10154
 <211> 1060
 <212> PRT
 <213> B.fragilis

<400> 10154
 Ser Ser Leu Ser Arg Cys Leu Glu Trp Lys Ala Glu Gln His Glu Asp
 1 5 10 15
 Thr Thr Ser Ser Pro Gly Ser Asp Leu Ser Val Val Ile Tyr Thr Gly
 20 25 30
 Ile Val Glu Val Asn Gly Phe Leu Gln Tyr Lys Met Lys Arg Arg Tyr
 35 40 45
 Leu Leu Ala Gly Leu Val Val Ser Ala Leu Leu Gly Val Gly Ala Lys
 50 55 60
 Val Pro Ala Ser Met Asp Ala Pro Val Arg Glu Val Phe His Thr Pro
 65 70 75 80
 Pro Gly Met Ser Ala Pro Ile Glu Pro Leu Leu Leu Tyr Gln Ala Ser
 85 90 95
 Gln Asp Glu Lys Cys Arg His Trp Val Asp Ser Val Tyr Asn Arg Met
 100 105 110
 Asn Leu Arg Glu Lys Val Gly Gln Leu Phe Ile Tyr Thr Ile Ala Pro
 115 120 125
 Val Gln Thr Lys Arg Asn Met Gln Leu Leu Arg Asp Ala Val His Thr
 130 135 140
 Tyr Lys Val Gly Gly Leu Leu Phe Ser Gly Gly Lys Ile Gln Asn Gln
 145 150 155 160

Ala	Thr	Leu	Thr	Asn	Glu	Ala	Gln	Arg	Met	Ala	Arg	Cys	Pro	Leu	Leu		
				165					170					175			
Ile	Thr	Phe	Asp	Gly	Glu	Trp	Gly	Leu	Ser	Met	Arg	Leu	Arg	Gly	Thr		
			180					185						190			
Pro	Val	Phe	Pro	Arg	Asn	Met	Val	Leu	Gly	Cys	Ile	Gln	Asp	Asn	Arg		
		195					200					205					
Leu	Ile	Tyr	Glu	Tyr	Gly	Arg	Glu	Met	Ala	Arg	Gln	Cys	Arg	Glu	Met		
	210					215					220						
Gly	Val	Gln	Val	Asn	Phe	Ala	Pro	Val	Ala	Asp	Val	Asn	Ile	Asn	Pro		
225				230						235					240		
Asp	Asn	Pro	Val	Ile	Asn	Thr	Arg	Ser	Phe	Gly	Glu	Asp	Pro	Val	Lys		
				245					250						255		
Val	Ala	Asp	Lys	Val	Ile	Ala	Tyr	Ala	Ser	Gly	Leu	Glu	Ser	Gly	Lys		
			260					265						270			
Val	Leu	Ser	Val	Cys	Lys	His	Phe	Pro	Gly	His	Gly	Asp	Thr	Asp	Val		
		275					280					285					
Asp	Ser	His	Lys	Ala	Leu	Pro	Val	Leu	Pro	Phe	Thr	Arg	Glu	Arg	Leu		
	290					295					300						
Asp	Ser	Val	Glu	Leu	Tyr	Pro	Phe	Lys	Glu	Ala	Ile	Arg	Ala	Gly	Val		
305					310					315					320		
Ser	Gly	Met	Met	Val	Gly	His	Leu	Gln	Val	Pro	Val	Ile	Glu	Pro	Ile		
				325					330						335		
Gly	Asp	Leu	Pro	Ser	Ser	Leu	Ser	Arg	Asn	Val	Val	Tyr	Gly	Leu	Leu		
			340					345						350			
Thr	Glu	Glu	Leu	Ala	Phe	Lys	Gly	Leu	Ile	Phe	Thr	Asp	Ala	Leu	Ala		
			355				360					365					
Met	Lys	Gly	Val	Ala	Gly	Asn	Lys	Ser	Val	Cys	Leu	Gln	Ala	Leu	Gln		
			370			375						380					
Ala	Gly	Asn	Asp	Met	Val	Leu	Ala	Pro	Arg	Arg	Leu	Lys	Glu	Glu	Met		
385					390					395					400		
Asp	Ala	Val	Leu	Glu	Ala	Val	Glu	Lys	Gly	Glu	Leu	Pro	Glu	Glu	Glu		
				405					410						415		
Ile	Asn	Ala	Lys	Cys	Arg	Lys	Val	Leu	Thr	Tyr	Lys	Tyr	Ile	Leu	Gly		
			420					425					430				
Leu	Glu	Arg	Lys	Pro	Phe	Val	Lys	Leu	Ser	Gly	Leu	Gly	Thr	Arg	Ile		
			435				440					445					
Asn	Thr	Pro	Gln	Thr	Arg	Asp	Leu	Ile	Ser	Arg	Leu	Asn	Leu	Ala	Ala		
	450					455					460						
Ile	Thr	Val	Leu	Asn	Asn	Lys	Asn	Asp	Val	Leu	Pro	Leu	His	Pro	Asp		
465				470						475					480		
Leu	Lys	Glu	Ala	Ala	Ile	Leu	Asn	Val	Gly	Lys	Pro	Glu	Glu	Ile	Glu		
				485					490					495			
Pro	Phe	Asp	His	Lys	Met	Lys	Lys	Tyr	Thr	Ser	Phe	Ala	Arg	Phe	Gln		
			500					505					510				
Leu	Arg	Lys	Asp	Leu	Pro	Glu	Ala	Glu	Gln	Gln	Lys	Leu	Arg	Asp	Ser		
		515					520					525					
Leu	Ala	Ala	Tyr	Arg	Arg	Val	Ile	Val	Thr	Val	Thr	Glu	Gln	Arg	Leu		
						535					540						
Ala	Ser	Tyr	Gln	Ser	Phe	Phe	Ala	Lys	Phe	Ala	Pro	Glu	Ser	Pro	Val		
545					550				555						560		
Ile	Tyr	Val	Phe	Tyr	Thr	Pro	Ala	Lys	Ser	Met	Leu	Gln	Ile	Gln	Arg		
				565					570						575		
Ala	Val	Ser	Ala	Ala	Glu	Ala	Val	Val	Leu	Ala	His	Ala	Ser	Arg	Asp		
			580					585					590				
Asp	Val	Gln	Arg	Val	Ala	Asp	Leu	Leu	Phe	Gly	Lys	Ala	Thr	Ala			
		595				600					605						
Asp	Gly	Arg	Leu	Ser	Ala	Ser	Ile	Gly	Gly	Leu	Phe	Pro	Thr	Gly	Ser		
	610					615					620						
Gly	Val	Thr	Ile	Thr	Pro	His	Thr	Pro	Phe	His	Phe	Val	Pro	Glu	Glu		

165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620

625 630 635 640
 Tyr Gly Met Lys Ser Glu Val Leu Arg Arg Ile Asp Thr Ile Ala Leu
 645 650 655
 Glu Gly Ile Lys Glu Gly Ala Tyr Pro Gly Cys Gln Val Leu Val Met
 660 665 670
 Lys Asp Gly Lys Ala Leu Tyr Asp Arg Cys Phe Gly Tyr His Thr Asp
 675 680 685
 Ala Asn Ser Glu Lys Val Lys Pro Thr Asp Ile Tyr Asp Leu Ala Ser
 690 695 700
 Leu Ser Lys Thr Thr Gly Thr Leu Leu Ala Ile Met Lys Leu Tyr Asp
 705 710 715 720
 Lys Gly Arg Phe Asn Leu Thr Asp Lys Val Ser Asp Tyr Leu Pro Phe
 725 730 735
 Leu Arg Lys Thr Asn Lys Glu Asn Leu Thr Ile Arg Glu Leu Leu Met
 740 745 750
 His Gln Ser Gly Leu Pro Ser Gly Leu Leu Phe Tyr Gln Glu Ala Ile
 755 760 765
 Asp Gly Lys Ser Tyr Lys Gly Ser Leu Phe Lys Gln Ser Lys Asp Ala
 770 775 780
 Leu His Thr Val Arg Leu Gly Val Arg Thr Trp Gly Asn Pro Arg Phe
 785 790 795 800
 Arg Phe Asn Lys Gly Met Ala Ser Lys Glu Lys Asn Gly Asp Tyr Thr
 805 810 815
 Leu Gln Val Cys Asp Ser Leu Trp Leu Asn Arg Ser Phe Arg Glu Glu
 820 825 830
 Ile Arg Lys Lys Ile Ala Glu Ala Pro Leu Lys Asp Lys Ser Tyr Arg
 835 840 845
 Tyr Ser Asp Val Gly Phe Ile Leu Leu Gln Met Leu Ala Glu Glu Leu
 850 855 860
 Ser Gly Lys Pro Met Asp Glu Tyr Leu Trp Gln Glu Phe Tyr Gln Pro
 865 870 875 880
 Met Gly Leu Glu His Thr Ala Tyr Leu Pro Leu Arg Tyr Phe Asp Lys
 885 890 895
 Lys Glu Val Val Pro Ser Ala Val Asp Arg Phe Leu Arg Lys Thr Thr
 900 905 910
 Leu Gln Gly Phe Val His Asp Glu Ser Ala Ala Phe Gln Gly Gly Ile
 915 920 925
 Ser Gly Asn Ala Gly Leu Phe Ser Asn Ala Arg Glu Val Gly Arg Ile
 930 935 940
 Tyr Gln Met Leu Leu Asn Gly Gly Glu Leu Asp Gly Arg Arg Tyr Leu
 945 950 955 960
 Ser Lys Glu Thr Cys Ala Leu Phe Thr Thr Glu Lys Ser Lys Ile Ser
 965 970 975
 Arg Arg Gly Leu Gly Phe Asp Lys Pro Asp Val Val Asn Glu Ser Lys
 980 985 990
 Ser Pro Cys Ala Ala Ser Val Pro Val Thr Val Phe Gly His Thr Gly
 995 1000 1005
 Phe Thr Gly Thr Cys Ala Trp Val Asp Pro Asp Asn Gly Leu Ile Tyr
 1010 1015 1020
 Val Phe Leu Ser Asn Arg Thr Tyr Pro Asp Ala Trp Val Asn Lys Leu
 1025 1030 1035 1040
 Ser Lys Leu Glu Ile Arg Glu Lys Ile Gln Glu Thr Ile Tyr Glu Ala
 1045 1050 1055
 Met Lys Glu Lys
 1060

<210> 10155

<211> 242

<212> PRT

<213> B.fragilis

<400> 10155

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Ile Asp Glu Thr Val Ile His Leu Lys Asp Ile Asn Lys Thr Tyr Asn
1          5          10          15
Asn Gly Ala Pro Leu His Val Leu Lys Gly Ile Asn Leu Asp Ile Glu
20          25          30
Arg Gly Glu Phe Val Ser Ile Met Gly Ala Ser Gly Ser Gly Lys Ser
35          40          45
Thr Leu Leu Asn Ile Leu Gly Ile Leu Asp Asn Tyr Asp Asn Gly Glu
50          55          60
Tyr Tyr Leu Asn Asn Val Leu Ile Lys Asp Leu Ser Glu Thr Lys Ser
65          70          75          80
Ala Glu Tyr Arg Asn Arg Met Ile Gly Phe Ile Phe Gln Ser Phe Asn
85          90          95
Leu Ile Ser Phe Lys Asn Ala Val Glu Asn Val Ala Leu Pro Leu Phe
100         105         110
Tyr Gln Gly Val Ser Arg Lys Lys Arg Asn Ala Leu Ala Met Glu Tyr
115         120         125
Leu Asp Lys Leu Gly Leu Lys Asp Trp Ala His His Met Pro Asn Glu
130         135         140
Met Ser Gly Gly Gln Lys Gln Arg Val Ala Ile Ala Arg Ala Leu Ile
145         150         155         160
Thr Gln Pro Gln Ile Ile Leu Ala Asp Glu Pro Thr Gly Ala Leu Asp
165         170         175
Ser Lys Thr Ser Val Glu Val Met Gln Ile Leu Lys Asp Leu His Lys
180         185         190
Thr Gly Met Thr Ile Val Val Val Thr His Glu Ser Gly Val Ala Asn
195         200         205
Gln Thr Asp Lys Ile Ile His Ile Lys Asp Gly Ile Ile Glu Arg Ile
210         215         220
Glu Glu Asn Leu Asn His Asp Ala Ser Pro Phe Gly Lys Asp Gly Tyr
225         230         235         240
Met Lys

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<210> 10156

<211> 148

<212> PRT

<213> B.fragilis

<400> 10156

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Met Pro Glu Ala Met Phe Ser Met Met Asp Asn Leu Phe Thr Gly Ile
1          5          10          15
His Val Leu Ile Trp Met Val Gly Leu Gly Thr Leu Leu Ala Gly Ala
20          25          30
Ile Gly Val Ser Asn Ile Met Met Val Thr Val Lys Glu Arg Thr Pro
35          40          45
Glu Ile Gly Asn Pro Arg Ala Ile Gly Ala Arg Pro Lys Asp Ile Leu
50          55          60
Gln Gln Ile Leu Ser Glu Ser Met Val Leu Thr Thr Ile Ala Gly Met
65          70          75          80
Ala Gly Ile Ser Phe Gly Val Leu Ile Leu Gln Leu Met Glu Ile Gly
85          90          95
Val Asn Ser Gly Lys Asp His Tyr Ser His Phe Gln Val Ser Phe Gly
100         105         110
Met Ala Ile Gly Thr Cys Leu Leu Val Thr Leu Gly Leu Leu Ala
115         120         125
Gly Leu Ala Pro Ala Tyr Arg Ala Met Ala Ile Arg Pro Ile Glu Ala

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130
Ile Arg Asp Glu
145

135

140

<210> 10157
<211> 261
<212> PRT
<213> B.fragilis

<400> 10157

Ser Lys Ile Leu Arg Arg Lys Lys Met Phe Asp Asn Glu His Leu Thr
1 5 10 15
Tyr Ile Cys Gly His Tyr Lys Lys Gly Ala Ser Glu Thr Tyr Asp Ser
20 25 30
Arg Gln Tyr Pro Arg Glu Arg Ser Lys Thr Glu Ile Leu Thr Thr Ile
35 40 45
Asn Pro Leu Leu Leu Phe Phe Ser Tyr Leu Ala Ala Leu Leu Asp His
50 55 60
Thr Glu Lys Tyr Pro Gly Thr Gln Tyr Thr Arg Met Asp Asp Leu Asn
65 70 75 80
Ile Asn Ser Phe Asn Ala Leu Tyr Thr Leu Tyr Tyr Arg Lys Ser Phe
85 90 95
Leu Phe Ala Lys Ser Tyr Val His Asp Glu Gln Val Ala Glu Asp Ile
100 105 110
Ala Ala Glu Ala Leu Ile Lys Leu Trp Glu Lys Leu Lys Thr Asp Ile
115 120 125
Ile Asn Ser Pro Gln Ala Met Leu Leu Thr Ile Leu Lys Asn Lys Ser
130 135 140
Leu Asp Tyr Leu Arg Leu Glu Gln Asn Lys Leu Asn Ala Met Ser Glu
145 150 155 160
Leu Ser Glu Leu Tyr Val Arg Glu Leu Asp Ile Arg Val Ser Ser Leu
165 170 175
Glu Ala Cys Asp Pro Ser Glu Ile Phe Ser Glu Glu Val Asn Gln Ile
180 185 190
Ile Gln Ala Thr Leu Arg Thr Leu Pro Glu Gln Thr Arg Lys Val Phe
195 200 205
Lys Met Ser Arg Phe Glu Asn Lys Met Asn Lys Glu Ile Ala Glu Asn
210 215 220
Leu Gly Ile Thr Val Lys Gly Val Glu Tyr His Ile Ser Arg Ala Leu
225 230 235 240
Lys Glu Phe Arg Ile Ser Leu Lys Asp Tyr Leu Pro Leu Phe Tyr Phe
245 250 255
Phe Phe Tyr Phe His
260

<210> 10158
<211> 1007
<212> PRT
<213> B.fragilis

<400> 10158

Asn Thr Val Tyr Glu Ile Pro Pro Arg Gln Thr Met Leu Lys Gln Leu
1 5 10 15
Leu Thr Val Val Phe Leu Leu Ser Ala Gly Thr Leu Trp Ala Gln Gln
20 25 30
Ala Ala Gly Leu Leu Pro Val Gln Glu Asp Thr His Cys Lys Glu Trp
35 40 45
Val Glu Gln Thr Leu Ser Arg Met Lys Leu Lys Asp Lys Val Gly Gln
50 55 60